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The Builder January 6, 1950

EXPORT EDITION

# THE BUILDER

*a Journal for the*

## ARCHITECT & CONSTRUCTOR

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# THE BUILDER

INCORPORATING

"ARCHITECTURE" and "THE BRITISH ARCHITECT"

UNIVERSITY OF ILLINOIS

VOL. CLXXVIII JANUARY 6, 1950 No. 5577

## *THIS WEEK'S NEWS*

PAGE

THE NAMES of several personalities prominent in the building industry and allied professions appeared in the New Year Honours List, including those of Mr. J. N. Comper, architect (knight), and Mr. Edward Monkhouse, Timber Controller, Board of Trade (knight). 2

THE R.I.B.A. prizes and studentships for 1950 have been announced and details of the awards are given on page 4

WORK on the rebuilding of the House of Commons has made remarkable progress of late and some illustrated notes on the air-conditioning system for the new House are contributed by Mr. J. R. Kell, A.M.I.Mech.E. 5

A CHART designed for the quick checking of measurements and angles of a roof frame has been devised by Mr. L. A. E. Chaplin. 16

TEN CONCLUSIONS for use by architects in the draughting rooms in designing heating and hot water services in the small house were given by Mr. Richard Eve, B.Arch., A.R.I.B.A., in a paper read at a recent meeting of the Architectural Science Board. 17

BRITISH CONTRACTORS interested in prefabricated building are asked to register their names with the Agent-General for Victoria to ensure that they receive details of the new Victorian Government proposal to purchase a further 1,000 prefabricated houses. 27

## "CITIES IN EVOLUTION"

FOR one who exercised so notable an influence on the technique of town and country planning, the late Sir Patrick Geddes wrote remarkably little on the subject. His only book, "Cities in Evolution," was published in 1915 and has been out of print for more than a generation; while it was not until 1947 that his studies and recommendations with regard to India, which he toured between 1914-1920, were issued in book form, and then only in a highly condensed version. The explanation, of course, is that Geddes was not a writer; he was a born teacher and expressed himself best in the spoken word. Nevertheless, all who are interested in town planning will welcome the new and revised edition of "Cities in Evolution," just issued,* for it is an original work of great significance which, although so long unobtainable and generally unread, has always been retained on the list of "compulsory text books" for town planning examination.

Geddes, born in Perth in 1854, was trained as a botanist and zoologist, but becoming interested in social questions and moved by the appalling conditions in overbuilt urban areas, he and his wife, in 1886, settled in a part of the Old Town of Edinburgh, which had degenerated into a slum, and reconditioned it. This was really the beginning of his practical interest in town planning. In 1892 he founded the "Outlook Tower" on Castlehill in Edinburgh, where he got together a remarkable "Civic Exhibition," which was later to expand into his famous "Cities and Town Planning Exhibition."

The passing of the first Town Planning Act in 1909 provided a strong stimulus to the production of schemes both ideal and otherwise; but there was a tendency to concentrate on the monumental and grandiose aspects, and we were perhaps too often invited to admire beautiful perspective drawings of civic centres, *places*, processional roadways and so forth. Geddes brought to the movement an acute consciousness of the real nature of the problem as it affected great areas of our old towns and cities, particularly those which had suffered chaotic expansion during the Industrial Revolution. Always he insisted on "survey before plan," or "diagnosis before treatment," with interrelated methods of investigation and interpretation.

At the great Town Planning Exhibition held at the Royal Academy in 1910 Geddes showed what Sir Patrick Abercrombie described as "that nightmare of complexity," the Edinburgh exhibition. "It was a torture chamber to all those simple souls who had been ravished by the glorious perspectives or heartened by the healthy villages shown in other and ampler galleries. Within this den sat Geddes, a most unsettling person, talking, talking . . . about anything and everything. The visitor could criticise his show—the merest hotch-potch—picture postcards—newspaper cuttings—crude old woodcuts—strange diagrams—archæological reconstructions; these things they said were unworthy of the Royal Academy—many of them not even framed—shocking want of respect! But if they chanced within the range of Geddes' talk, henceforth nothing could medicine them to that sweet sleep which yesterday they knew. There was something more in town planning than met the eye!" Sir George Pepler has said: "P.G.'s survey studies were both inspiring and frightening: they fascinated by making plain some of the causes which help to mould our environment, they frightened by revealing the immense importance of the issues with which one was trying to grapple. . . . To one of necessity immersed to a considerable extent in the machinery of planning, he was a source of continual refreshment, a constant reminder that the machine is of no value except as a means of facilitating the living of a full life by the greatest number."

In 1914 Geddes sailed to India to demonstrate town planning principles, and the "Cities and Town Planning Exhibition" was sunk *en route* by the German raider "Emden." As Miss Jaqueline Tyrwhitt relates in her admirable introduction to this book, Geddes' friends in England—prominently among them Dr. H. V. Lanchester, Sir Raymond Unwin and Sir George Pepler—began to collect other material to send out to Geddes in India. It was displayed in Madras in the following year, 1915, with the addition of a number of original drawings and paintings. From 1915 to 1923 the exhibition was repeatedly shown in a number of Indian cities, and in 1924 it was packed and sent by his son, Dr. Arthur Geddes, to the Scots College, then being built by Patrick Geddes at Montpellier in the South of France. "There it remained unopened. After Geddes' death in 1932 his son, unwilling to break up the exhibition, approached various planning bodies with a view to its utilisation as a whole, but without success. During the whole of the second world war the exhibition remained at Montpellier. . . . In 1947, Dr. Geddes agreed to have the exhibition sent over to England, and it is now lodged in the Town Planning Department of the University of London." A selection of illustrations from this exhibition is reproduced in the book under notice, with text drawn from Geddes' catalogue to the first exhibition.

The book itself, as Geddes points out in his preface,

* London: Williams and Norgate, Ltd., price 18s. net.

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is neither a technical treatise for the town planner or city councillor, nor a manual of civics for the sociologist or teacher, but is "frankly of introductory character." The feeling of one who comes to the book for the first time will probably be that it is all very familiar. This is perhaps the greatest compliment that can be paid it, for as Mr. Lewis Mumford has pointed out elsewhere, Geddes was a pioneer in the ideas which have now become the general property of all concerned with this branch of planning, and the process of catching up with his thoughts has had the ironic consequence of making them seem less significant than they actually were.

The book is not easy reading mainly because, as Miss Tyrwhitt suggests, Geddes "wrote quickly and unwillingly with his mind racing ahead of his words," his writing being "to a certain extent, a direct transcript of the spoken language." It is made more difficult by the author's fondness for coining neologisms to express his new conceptions. At times he seems to be thinking aloud. For example, having discussed the merging of industrial towns one into another, he writes: "Some name then for these city regions, these town aggregates, is wanted. Constellations we cannot call them; conglomerations is, alas, nearer the mark at present, but it may sound unappreciative; what of 'Conurbations'?" That at least is a word which has found a permanent place in town planning terminology, but how many people know that Geddes invented it?

Several chapters of the original book have been omitted from this new edition on the ground that they contained "contemporary material of interest only to readers thirty years ago," but besides the selection of illustrations from the exhibition, already mentioned, there are some interesting additions in the form of appendices, including Geddes' final Dundee lecture, most stimulating and readable, a brief biography of Geddes, and three contributions under the title "The Geddes Diagrams." These diagrams, called "The Notation of Life," are contained in a sort of swastika, each quarter of which is sub-divided into nine squares, filled with descriptions of "Acts, Facts, Deeds and Thoughts," the whole being a statement of man's active and passive life. Some are said to regard these diagrams as incomprehensible, others as a contribution towards a synthetic form of thought. We should not care to say who is right! At least they give an indication of the analytical powers of Geddes' mind. The book, which has been edited by the Outlook Tower Association, Edinburgh, and the Association for Planning and Regional Reconstruction, London, under the general editorship of Miss Jaqueline Tyrwhitt, serves to show the stature of a man whose influence is at work among us to-day as much as ever it was during his life.

# NOTES AND NEWS

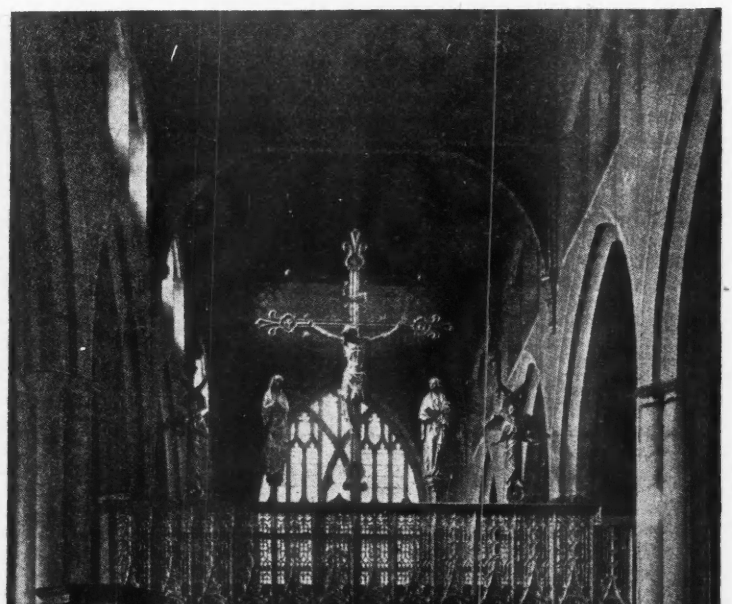
## New Year Honours

MR. JOHN NINIAN COMPER, architect, and Mr. Edward Bertram Monkhouse, Timber Controller, Board of Trade, were created Knights Bachelor in the New Year Honours list published on January 2. The knighthood conferred upon Mr. Comper will give much satisfaction. Always an individualist — he describes himself in "Who's Who" as "Architect (not registered)"—he is a direct link with Bodley and Garner, to whom he was articled. His work has been almost entirely ecclesiastical, the most recent examples being the Warriors' Chapel, Westminster Abbey (1927) and the church of St. Philip's, Portsmouth (1937). Mr. Comper is in his 86th year.

Other honours were conferred upon members in the building professions and industry as follows:

**C.B.**—G. H. Fretwell, Director-General of Works, Air Ministry; E. F. Muir, Under-Secretary, Ministry of Works. **G.B.E.**—Sir Malcolm Trustram Eve, K.C., lately Chairman, Central Land Board and War Damage Commission. **C.B.E.**—I. C. Ginner and Stanley Spencer, painters; C. A. Morrison, Chief Surveyor, Ministry of Works; H. Russell, lately Director of aluminium house production, Ministry of Supply; F. M. Sleeman, past-president N.F.B.T.E.; E. H. T. Wiltshire, Assistant Secretary, Ministry of Town and Country Planning. **O.B.E.**—T. S. M. Terrace, Ministry of Works' Director of Works and Services in the Far East; W. H. Lindsay, Deputy Director of Public Works, Federation of Malaya; J. C. Cox, Secretary, Building Apprenticeship and Training Council; R. Fletcher, Borough Engineer and Surveyor, Smethwick; W. H. J. Sealy, Assistant Director for Wales, Ministry of Works; A. Alec-Smith, lately Area Officer, Hull, Timber Control, Board of Trade; W. M. Keesey, lately H.M.I., Ministry of Education; J. W. R. Porter, Assistant Valuer, L.C.C.; and Alderman A. H. Telling, General Secretary, National Association of Operative Plasterers.

**M.B.E.**—E. V. Balsom, A.M.I.Mech.E., secretary, Institution of Sanitary Engin-



**ST. CYPRIAN'S, MARYLEBONE, which has been described as Mr. J. N. Comper's "most important and complete work in London." The conferment of a knighthood upon Mr. Comper is announced in the adjoining column.**

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eers; John Campbell, general secretary, Scottish Slaters, Tilers, Roofers and Cement Workers Society; W. M. S. Cox, assistant reg. director, S.W. Region, M.O.W.; C. Emerson, surveyor, Sunderland R.D.C.; J. W. Gothwaite, assistant quantity surveyor, Imperial War Graves Commission; and H. H. E. Timmis, F.R.I.C.S., Assistant Regional Planning Officer, Ministry of Town and Country Planning.

### Awards for Carpet Design.

THE competition promoted by the Incorporated Association of Architects and Surveyors for the design of strip carpet, and open to all architects and architectural students in the United Kingdom and the Commonwealth, has now been assessed and the awards made. The purpose of the competition was to encourage architects to play a larger part in this field of design.

The competition was divided into three sections: (1) Hotels, (2) Cinemas and Theatres, and (3) Ships—with a first prize of 75 guineas and a second prize of 25 guineas in each class. The entries submitted were of a high standard both in design and in suitability to purpose, providing a strong argument for the wider employment of the architect in this field.

The successful competitors are as follows:

*Hotels*: (1st) W. F. Martin, Wood Green, London, N.22; (2nd) Peter Kirkland, A.R.I.B.A., A.A.Dip., and Cynthia Kirkland, A.R.I.B.A., Adelaide, South Australia.

*Cinemas and Theatres*: (1st) Gerald Stanwell, A.R.I.B.A., M.Inst.R.A., Beckenham, Kent; (2nd) John D. Billingham, South Woodford, E.18.

*Ships*: (1st) J. Faczynzki, Richmond, Surrey, and J. W. Jakubowics, London, W.2; (2) R. E. Summers, A.R.I.B.A., Clifton, Bristol, 8.

The assessors were Mr. Kenneth J. Lindy, F.R.I.B.A., F.I.A.A.; Mr. E. C. Leach, F.R.I.B.A.; Mr. Hurley Robinson, F.R.I.B.A., F.I.A.A.; and, acting as technical advisers, Mr. John Anderson and Mr. J. P. Glass.

### M.o.H. Housing Medals.

FOLLOWING the announcement some time ago by Mr. Aneurin Bevan, Minister of Health, that he proposed to issue medals for housing estates which attained a high standard of design, the Council of the R.I.B.A. has decided to approve in principle detailed proposals recently submitted by the Ministry and to co-operate in organising the medal scheme. A sub-committee has been appointed to work out full details with representatives of the Ministry, the members of it being: Mr. C. H. Aslin, F.R.I.B.A., Mr. A. W. Kenyon, C.B.E., F.R.I.B.A., and Mr. Lewis J. F. Gomme, L.R.I.B.A.

The medal scheme provides for awards to be made annually in each region outside London for one urban scheme and one rural scheme, while in the London region there will be awards for a scheme of new development and a scheme of reconstruction. The regions referred to are the 11 administrative regions into which England and Wales are divided. The R.I.B.A. propose setting up an awards committee in each region.

### Bilston Abandons "Reilly Precincts."

IN an endeavour to speed up the borough's housing progress, Bilston Town Council have decided to abandon, wherever possible, the Reilly principle of precinct planning. The Council was one of the first authorities to adopt the principle, which is in operation at Stow Lawn, one of the largest estates in the town.

It was decided that this estate, on which work was started early in 1946, and which will accommodate 658 houses, should be completed as a special project for the 1951 Festival of Britain. The council have also agreed to enter the estate for the national architectural award in connection with the Festival.

Councillor W. L. Hughes, chairman of the Housing Committee, has said, in a special report, that admirable though the Reilly principle might be for a town with plenty of space, it had proved an expensive luxury for a built-up area like Bilston. Had the Stow Lawn estate been planned on traditional lines, it would have accommodated an extra 200 houses and rents would have been round about 3s. a week lower, he said.

Other measures adopted for hastening progress included a decision to draw up contracts containing incentives to builders for speedy completion of houses.

[Houses and flats on the Stow Lawn Park Estate, designed by Ella B. Briggs, L.R.I.B.A., were illustrated in *The Builder*, October 7, 1949.—ED.]

**NEW YEAR HONOURS.** (*Left*): **Mr. J. N. Comper, architect, who was created a knight in the New Year Honours announced on January 2.** (*Right*): **Mr. F. M. Sleeman, past-President of the National Federation of Building Trades Employers, who was awarded the C.B.E.**

### Birmingham's Housing Programme.

MR. G. W. CHANDLER, formerly divisional engineer for the Eastern Division of the City of Birmingham, has been appointed to direct Birmingham's housing programme. The appointment of a senior officer immediately responsible to the City Surveyor, and concerned only with housing, was recommended by the Joint Housing Conference in October last.

Mr. Chandler, who has 13 years' experience in housing and divisional work, has intimated that he will concentrate on speeding up housing in the city.

### M.o.W. Winter Lectures.

FOLLOWING are details of lectures organised by the Ministry of Works to be held in January :—

*January 11.* "Failures in Concrete—Their Causes and Cure." Technical College, Manchester-road, Bolton (speaker: Mr. B. H. Knight, D.Sc.), 7.15 p.m. *January 12.* "Timber in Building—Factors Affecting its Behaviour and Durability," Leicester College of Art, The Newarke, Leicester (speaker: Mr. R. G. Bateson, M.A.(Oxon), 7.15 p.m.; "Standards and Codes of Practice for Building," Central Library, Burnley (speaker: Dr. C. Roland Woods, M.B.E., LL.D.), 7.15 p.m.; "Failures in Concrete Work—Their Causes and Cure," Technical College, Abbey Foregate, Shrewsbury (speaker: Mr. B. H. Knight, D.Sc.), 7 p.m. *January 13*, "Building (Safety, Health and Welfare) Regulations, 1938," Education Buildings, Guild-street, Burton-on-Trent (speaker: Mr. R. G. Ward), 7 p.m. *January 17* (same subject), Suckling House, Norwich (speaker: Mr. W. G. Thomas), 8 p.m.; "Heating Research for Houses," Mill End County Secondary School, High Wycombe (speaker: Mr. G. D. Nash, A.R.I.B.A.), 7 p.m.; "Mechanisation of Small Jobs," Town Hall, Devizes (speaker: Mr. J. F. Eden, B.Sc.), 7 p.m. "Changes in Building Technique," Y.M.C.A. Hall, St. Andrew-street, Edinburgh (speaker: Mr. R. Fitzmaurice, B.Sc.), 7 p.m. *January 18* (same subject and speaker, Dundee Institute of Art and Technology, Bell-street, Dundee, 7 p.m.); "Building (Safety, Health and Welfare) Regulations, 1948," Yare Hotel, Great Yarmouth (speaker: Mr. W. G. Thomas), 7.45 p.m.; "Mechanisation of Small Jobs," National Farmers' Union, Queens-street, Exeter (speaker: Mr. J. F. Eden, B.Sc.), 7 p.m.; "Site Records for Builders," Tempest Anderson Hall, Museum-gardens, York (speaker: Mr. R. H. James), 7.15 p.m.; "Economy in Traditional House Building," The Technical College, Blackburn (speaker: Mr. N. S. Pippard), 7.15 p.m. *January 19*, "Changes in Building Technique," MacRobert Hall, Robert Gordon's Colleges, Aberdeen (speaker: Mr. R. Fitzmaurice, B.Sc.), 7 p.m.; "Site Records for Builders," Y.M.C.A. Building, Albion-place, Leeds (speaker: Mr. R. H. James), 7.15 p.m. "Mechanisation of Small Jobs," Mutley Assembly Rooms, Mutley Plain, Plymouth (speaker: Mr. J. F. Eden, B.Sc.), 7 p.m.; "Techniques and Devices for Improving Bricklaying Output," Lecture Theatre, Gas Showrooms, Parliament-street, Nottingham (speaker: Mr. C. S. Thompson, A.M.I.Mech.E.), 7.15 p.m. *January 20*, "Changes in Building Technique," Rankine Hall, Institution of Engineers and Shipbuilders, Elmbank-crescent, Glasgow (speaker: Mr. R. Fitzmaurice, B.Sc.), 7 p.m.; "Techniques and Devices for Improving Bricklaying Output," Carnegie Hall, Public Library, Abingdon-street, Northampton (speaker: Mr. C. S. Thompson, A.M.I.Mech.E.), 7.15 p.m. *January 24*, "Timber in Building—Factors Affecting its Behaviour and Durability," Southern Grammar School for Girls, Fawcett-road, Southsea (speaker: Mr. R. G. Bateson, M.A.(Oxon), 7 p.m.; "Prestressed Concrete Developments at Ministry of Works Field Test Unit," The Guildhall, Hull (speaker: Mr. O. J. Masterman, B.Eng.), 7.15 p.m. *January 25* (same subject and speaker, Technical College, Queen-street South, Huddersfield), 7.15 p.m. *January 26* (same subject and speaker, College of Technology, Dept. of Building, Salmon Pastures, Sheffield), 7.15 p.m. *January 31*, "Failures in Concrete Work—Their Causes and Cure," Technical College, Cauldon-place, Stoke-on-Trent (speaker: Mr. B. H. Knight, D.Sc.), 7.30 p.m.; "Building (Safety, Health and Welfare) Regulations, 1948," Metropolitan Hall, High-street, Newport, I.O.W. (speaker: Mr. W. D. Short, B.Sc.), 7 p.m.

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### I.U.A. Cairo Meeting.

A MEETING of the Executive Committee of the International Union of Architects is to take place in Cairo from January 9 to 17. During the course of the meeting excursions will be made to spinning mills, workmen's dwellings, the Mohamed Ali dams and Alexandria.

### London Airport Ground Traffic.

THE Ministry of Civil Aviation has issued (Stationery Office, 1s. 6d.) a report on ground traffic movement at London airport.

### An Appointment.

MR. HUGH KELLY has been elected general secretary of Plumbing Trades Union to fill the vacancy created by the resignation of Sir John W. Stephenson, C.B.E., J.P.

### Professional Announcements.

MR. C. GINGELL, A.R.I.B.A., A.R.I.C.S., housing architect to the Rhondda Council, has recently opened new offices at 13, Ystrad-road, Pentre, Rhondda, and will be pleased to receive trade catalogues at this address.

MESSRS. PYLE & SAINT, L. and A.R.I.B.A., Thomas-street House, Cirencester, have opened a branch office at 5, Tailor's-court, Broad-street, Bristol, where the managing assistant, Mr. E. A. Clarke, A.R.I.B.A., will be pleased to receive trade catalogues, etc.

MESSRS. BANKS, WOOD & PARTNERS, quantity surveyors, of 3, Richmond-hill, Bristol, have taken into partnership Mr. G. L. Thomson, A.R.I.C.S., who will be in charge of their Exeter office at 24, Southernhay East, Exeter.

## COMING EVENTS

**Tuesday, January 10.**

HOUSING CENTRE TRUST.—"Communal Laundries," by Miss C. J. Wilson. Housing Centre, 13, Suffolk-street, Pall Mall, S.W.1. 6 p.m.

INDUSTRIAL WELFARE SOCIETY.—First of a series of four lectures on "Industrial Law," by Mr. Harry Samuels, Barrister-at-Law. 48, Bryanston-square, W.1. 5.30 p.m. Remaining lectures on January 17, 24, 31.

**Wednesday, January 11.**

INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS.—"Acoustics and Sound Insulation," by Mr. H. R. Humphreys, A.R.I.B.A. Caxton Hall, Westminster, S.W.1. 6 p.m.

L.M.B.A. (CENTRAL AREA No. 1).—Annual meeting preceded by a luncheon. Derry and Tom's Restaurant, Kensington High-street, W.8. 1.45.

INSTITUTION OF HEATING AND VENTILATING ENGINEERS.—"Domestic Hot Water," by Mr. J. C. Weston, B.Sc. Institution of Mechanical Engineers, Storey's-gate, S.W.1. 6 p.m.

**Thursday, January 12.**

INSTITUTION OF STRUCTURAL ENGINEERS.—"Steel Economy," by Mr. L. R. Creasy. 11, Upper Belgrave-street, S.W.1. 6 p.m. This is in place of December 15 meeting which was postponed.

**Friday, January 13.**

INSTITUTION OF MECHANICAL ENGINEERS (APPLIED MECHANICS GROUP).—"The Use of Mild Steel for Service at Sub-Zero Temperatures," by Mr. F. H. Keating and Mr. E. V. Mathias, B.Sc. Storey's-gate, St. James's Park, London, S.W.1. 5.30 p.m.

## FROM "THE BUILDER" OF 1850

*Saturday, January 5, 1850.*

Our title, "THE BUILDER," is still erroneously regarded by many in a narrow and confined sense—as appertaining simply to the wants and advantage of a class. Looked at properly, and it is gradually becoming more and more so, it has a wide significance, and embraces legitimately the consideration of subjects which ought to interest nine-tenths of the population.

As regards classes, we care no more for architects or engineers than we do for builders—each in their province—and we are as warmly anxious to assist in bettering the condition and raising the character of workmen as we are to obtain information for their masters, and to secure for all three that consideration on the part of the public to which they are entitled. (*From a leader.*)

## R.I.B.A. PRIZES AND STUDENTSHIPS, 1950

### The Council's Deed of Award

AT a General Meeting of the Royal Institute of British Architects held on January 3, the Council's Deed of Award giving the results of the competitions for the Annual Prizes and Studentships awarded by the R.I.B.A. was read. There were in all 712 competitors. The total value of the Prizes and Scholarships offered by the R.I.B.A. is over £3,000 a year.

The results of the various competitions are:—

*The Tite Prize: A Certificate and £100 for the study of Italian Architecture* (Subject: "An Industrial College Research Library"). Winner: James Daniel Shearer (Student R.I.B.A.) (School of Architecture, Edinburgh Coll. of Art).

*The Soane Medallion and £120 for Architectural Study Abroad* (Subject: "A Parish Church"). Winner: Colin Laird, A.R.I.B.A. (Sch. of Architecture, Polytechnic, Regent-street, London).

*The Pugin Studentship: A Silver Medal and £80 for the study of Mediaeval Architecture of Great Britain and Ireland.* Winner: Derek Anthony Cobb (Student R.I.B.A.) (Sch. of Architecture, University of Manchester).

*The Owen Jones Studentship: A Certificate and £80.* Winner: John Newel Lewis, A.R.I.B.A. (Sch. of Architecture, Polytechnic, Regent-street, London).

*The Grissell Gold Medal and £35: For the Encouragement of the Study of Construction* (Subject: "A Sports Club House"). Winner: Kenneth William Charles Reed, A.R.I.B.A. (Sch. of Architecture, Polytechnic, Regent-street, London).

*The Andrew N. Prentice Bequest: A Certificate and £150 for the study of Spanish Architecture.* Winner: (Miss) Rachel Alice Caro, Dip.Arch. (Lond), A.M.T.P.I., A.R.I.B.A. (Bartlett Sch. of Architecture, University College, London).

*The Royal Institute Silver Medal and £50 for an Essay.* Not awarded.

*The Banister Fletcher Silver Medal and £26 5s. for the study of History of Architecture* (Subject: "The Smaller English Eighteenth-Century Country House: Its Setting and Furnishing"). Winner: John Leigh Corfield (Student R.I.B.A.) (Swansea).

*The Alfred Bossom Research Fellowship and £250 for Post Graduate Research.* Winner: Leonard William Elliott, A.M.I.C.E., A.M.I.Struct.E., A.R.I.B.A. (London, S.W.1).

*The Godwin and Wimperis Bursary: A Silver Medal and £245 for the study of works of Modern Architecture Abroad.* Winner: Emil C. Scherrer, M.A., F.R.I.B.A. (Sch. of Architecture, University of Manchester).

*The Henry Saxon Snell prize and Theakston Bequest,* £125 (offered jointly by the R.I.B.A. and the Architectural Association for the study of the improved design and construction of hospitals, convalescent homes and asylums for the aged and infirm poor). Winner: Sidney Edward Thomas Cusdin, O.B.E., A.A. Diploma, A.R.I.B.A. (A.A. Sch. of Architecture). Cert. of Hon Mention: Kenneth Halstead Evans, Dip.Arch., A.R.I.B.A. (Liverpool Sch. of Architecture, University of Liverpool).

*The Hunt Bursary: £75 for the Encouragement of the study of Housing and Town Planning.* Winner: Leslie Vivian Mitchell, Dip.Arch., A.M.T.P.I., A.R.I.B.A. (Salisbury, S. Rhodesia) (Sch. of Architecture, Polytechnic, Regent-street, London).

*The Athens Bursary: £125 for study at the British School at Athens.* Awarded to: Frank Fielden, A.R.I.B.A. (Sch. of Architecture, King's College, Newcastle-upon-Tyne).

*The Henry L. Florence Bursary: A Certificate and £350 for the study of Greek, Hellenistic and Byzantine Architecture of the Mediterranean Basin.* Awarded to: George Uvedale Spencer Corbett, R.E., A.R.I.B.A. (A.A. Sch. of Architecture).

*The Arthur Cates Prize:* £80 (Subject: "A Study of the Cantilever Principle in Architectural Design"). Winner: Victor Charles Launder, A.R.I.B.A. (Sch. of Architecture, Southern College of Art, Portsmouth).

*The Ashpitel Prize,* 1949 (name to be announced later).

*The Rome Scholarship in Architecture,* 1949: £250 per annum for two or three years' study and research at the British School at Rome. Offered by the R.I.B.A. and awarded by the Faculty of Architecture of the British School at Rome. Awarded to: Ian Scott Melville, A.R.I.B.A. (Liverpool Sch. of Architecture, University of Liverpool).

*The R.I.B.A. Silver Medal and £10 in Books for Students of Schools of Architecture recognised for exemption from the Final Examination,* 1949. Awarded to: Philip Russell Diplock, B.Arch. (Student R.I.B.A.) (Liverpool Sch. of Architecture, University of Liverpool).

*The R.I.B.A. Bronze Medal and £10 in Books for Students of Schools of Architecture recognised for Exemption from the Intermediate Examination,* 1949. Awarded to: Frank Sykes (Student R.I.B.A.) (Leeds Sch. of Architecture).

*The Archibald Dawnay Scholarships,* 1949: *Five Scholarships of the value of £60 each for the Advanced Study of Construction.* James Michael Pollard (Stud. R.I.B.A.) (Leicester College of Art); Edward Jones Williams (Stud. R.I.B.A.) (Welsh Sch. of Architecture); William Alexander Greig (Stud. R.I.B.A.) (Robert Gordons Technical Coll., Grays Sch. of Art, Aberdeen); Alexander Henry Bannerman (Stud. R.I.B.A.) (Robert Gordons Technical College, Grays Sch. of Art, Aberdeen); John Smith Bonnington (Stud. R.I.B.A.) (Sch. of Architecture, King's College, Newcastle-upon-Tyne).

*The R.I.B.A. Henry Jarvis Studentship at the School of Architecture, The Architectural Association,* 1949: £50. Awarded to: William John Gilbert Godwin (Student R.I.B.A.).

*The R.I.B.A. Howard Colls Travelling Studentship at the Architectural Association,* 1949: £15 15s. Awarded to: Robert Alfred Maguire (Prob. R.I.B.A.).

*The R.I.B.A. Donaldson Medal at the Bartlett School of Architecture, University of London,* 1949. Awarded to: Mr. Edward Martin Glossop Wells, A.R.I.B.A., 32, Gunter Grove, Chelsea, London, S.W.10.

*The R.I.B.A. (Anderson and Webb) Scholarship at the School of Architecture, Cambridge University,* 1949: £55. Awarded to E. H. Cullinan, (Cambridge University Sch. of Architecture).

*The R.I.B.A. Prize for Art Schools and Technical Institutions with Facilities for the Instruction of Intending Architects* (£10 *in Books*), 1949. No entries.

*The R.I.B.A. Prizes for Public and Secondary Schools.*—(*a*) Essays, no entries. (*b*) Sketches, £5 5s. to Brian Williams, the Grammar School, Manchester, for his drawings of the Parish Church of St. Leonard, Middleton.

The competition drawings (with certain exceptions) are now on exhibition at the R.I.B.A., 66, Portland-place, London, W.1, until February 7.

The president, Mr. Michael Waterhouse, M.C., will present the medals and prizes and will deliver an address to students at 66, Portland-place, W.1, on Tuesday, February 7 next, at 6 p.m., and a criticism will be given by Mr. E. Maxwell Fry, F.R.I.B.A., of the work submitted.

## L.C.C. CONCERT HALL STRIKE

### Disputes Commission's Findings

IN connection with the strike of building workers at the L.C.C. Concert Hall site on the South Bank, the London Regional Joint Emergency Disputes Commission met for over four hours on Tuesday, January 3, and subsequently announced the following findings:—

"The Commission finds that the action of the men in withdrawing their labour is unconstitutional and directs that they return to work forthwith.

"In view of the complexity and urgency of this contract, the firm have made a practice of discussing any impending discharges with the leading representatives of the men in order that there should be full understanding of the reasons for their discharge and so that no difficulty should arise. In the case of the men in question, this practice was, through a misunderstanding, not followed, and as a result concern was caused among the men on the job in view of the necessarily large amount of authorised overtime now being worked.

"Of the seven men originally concerned the discharge of three has been accepted, one has been reinstated, and the position of the remaining three falls to be considered. In view of the misunderstanding referred to, the Commission recommends that provided these three men report for duty immediately with the remainder of the men their notice of discharge be withdrawn pending their cases being investigated in accordance with the normal practice on the contract."

The findings are signed by Mr. D. E. Woodbine Parish, chairman, and Messrs. Roger E. Stenning and E. L. Jones, joint secretaries.

### An Appointment.

MR. N. C. SIDWELL, B.Sc., M.I. Struct.E., principal of the Department of Building at the Technical College, Barnsley, has been appointed head of the Department of Building at the Heriot-Watt College, Edinburgh.

# REBUILDING of the HOUSE of COMMONS

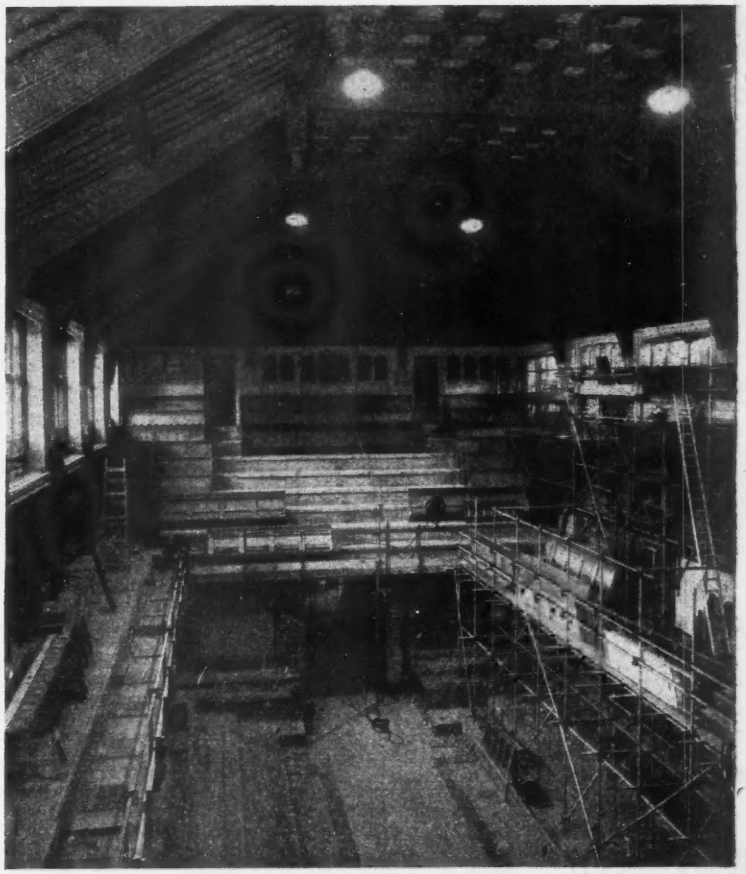
## Progress Report and Some Notes on the Air-Conditioning

THE work on the rebuilding of the House of Commons—partly destroyed on May 10, 1941—has of late made remarkable progress. The exterior is all but finished, and a few months more will see the internal structural work, with its magnificent carving, completed.

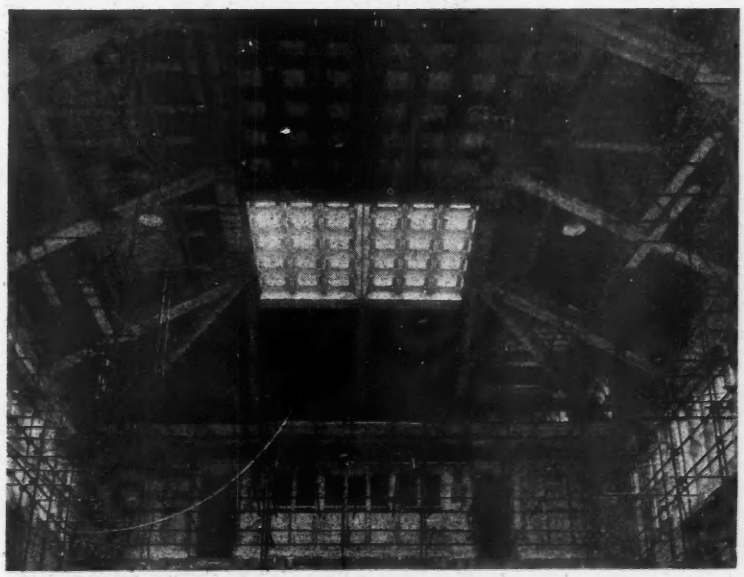
The House conforms generally to the recommendations made by the Select Committee on House of Commons (Rebuilding), which reported in 1944. Clearance of the site started on May 10, 1945, and the demolition of the old work and the foundation and erection of the steel frame for the new building took until the middle of August, 1946, the new building being erected on the original concrete raft which extends under the whole of the Palace of Westminster. In April, 1947, the contract was let for the clothing of the steel frame and the completion of all remaining building work necessary to provide the new Chamber for the House of Commons and its ancillary accommodation. It is expected that the House will be completed in the summer of this year. Sir Giles Scott, O.M., R.A., P-P.R.I.B.A., was appointed by the Minister of Works as the architect, and Dr. Oscar Faber, O.B.E., D.Sc., as the consulting engineer. All contracts have been let by the Ministry of Works under the supervision of Sir Charles Mole, Director-General of Works.

The floor of the new House of Commons has exactly the same dimensions as the old Chamber, i.e., 68 ft. by 45 ft. 6 in., but above the Gallery level the dimensions of the Chamber have been increased from 46 ft. 6 in. by 84 ft. to 48 ft. by 103 ft. to accommodate the additional Strangers' and Reporters' seating. The total height of the Chamber is 46 ft., as compared with 44 ft. in the old Chamber. There are now 915 seats within the Chamber, excluding those behind the stone screens, as compared with 744 in the old Chamber, an increase of 171 seats with uninterrupted view. The total seating of the Chamber (including those behind the stone screens) is split up as follows:—

| | | |
|---|---|---|
| Members... ... | ... | 437 |
| Special Strangers | ... | 165 |
| Ordinary Strangers | ... | 161 |
| Reporters ... | ... | 161 |
| Officials ... ... | ... | 15 |
| Total | ... | 939 |



**View of the Chamber looking towards the Churchill Arch, showing progress to December 17 last. The artificial lighting, which will be from the panels in the roof, is not yet installed.**



**A view taken 12 months ago, showing demonstration lighting panels in position.**

Immediately below the floor of the House is a ventilation duct space which contains the trunking and electrical services, the plant being mainly housed under the Central Lobby and under the Commons Inner Court. Below this ventilation duct space is a ground floor which provides about 8,000 sq. ft. of Ministers' accommodation, comprising 16 Ministers' rooms and Ministers' conference rooms. On the lower ground floor below is about the same area for Members, split up into secretarial rooms, conference rooms and interview rooms. Above the Chamber is a suite of offices for the Clerk of the House, approximately 7,000 sq. ft. in area.

### The Architectural Style.

The architect, in his report to the Select Committee concerning the architecture adopted, stated as follows: "Although the general form and arrangement of the Chamber conform to the instructions of the Select Committee, no attempt has been made to follow the design of the old woodwork or stonework, though the same style of architecture has been adopted, namely, late

**Stonecarvers at work on finials for the roof.**

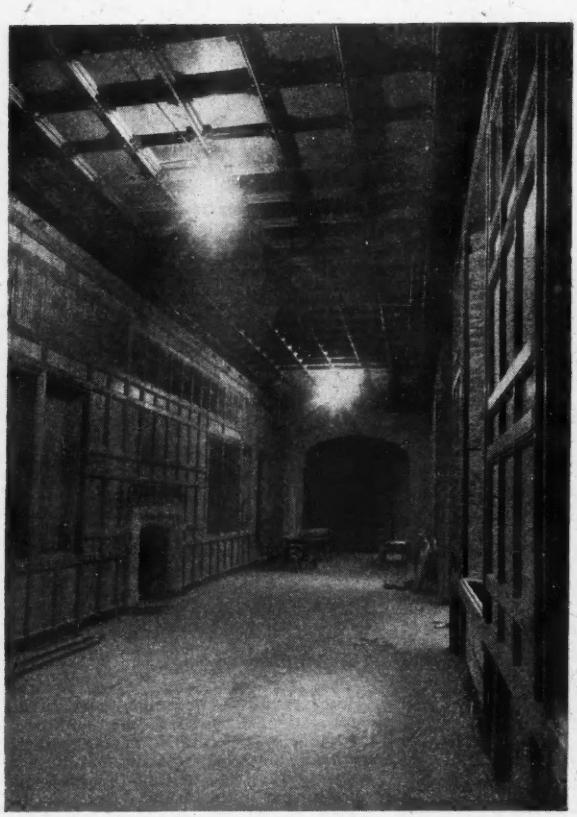
Gothic. The design of the wood and stone detail in the old building was not satisfactory, and could be considerably improved. Feeling as we do that modern architecture in its present state is quite unsuitable for the rebuilding of the House of Commons, and bearing in mind that the Chamber forms a small portion of an existing large building, we are strongly of opinion that the style adopted should be sympathetic with the rest of the structure, even if it has to differ in some degree in order to achieve a better quality of design. The Gothic detail of the old Chamber was lifeless and uninteresting, and the richness was spread evenly over the whole area without relief or contrasts. It has been our endeavour to remedy this, with the result that, though still Gothic in style, the effect will be entirely different from what existed before."

The work has now reached a stage where it can be seen that Sir Giles Scott's endeavour has achieved its aim; the general characteristic of the new oak work design is a concentration on ornament to form horizontal bands of enrichment with contrasting plain areas. English oak specially treated to give a cool but pleasing colour has been used throughout. The roof design differs from the old in several important respects, although the general shape is retained. The roof would be more accurately described as a shaped ceiling which, in view of the large span, would give a much better effect than treating as a flat ceiling. The angle of the slopes forming the outer area of the ceiling is most important, as it affects the proportion and shape of the whole Chamber, and for this reason the National Physical Laboratory were consulted in regard to the acoustic effects. Artificial lighting is provided through the square panels in the centre of the ceiling. A domestic type of window design has been adopted as being more suitable than the somewhat ecclesiastical type of the old Chamber.

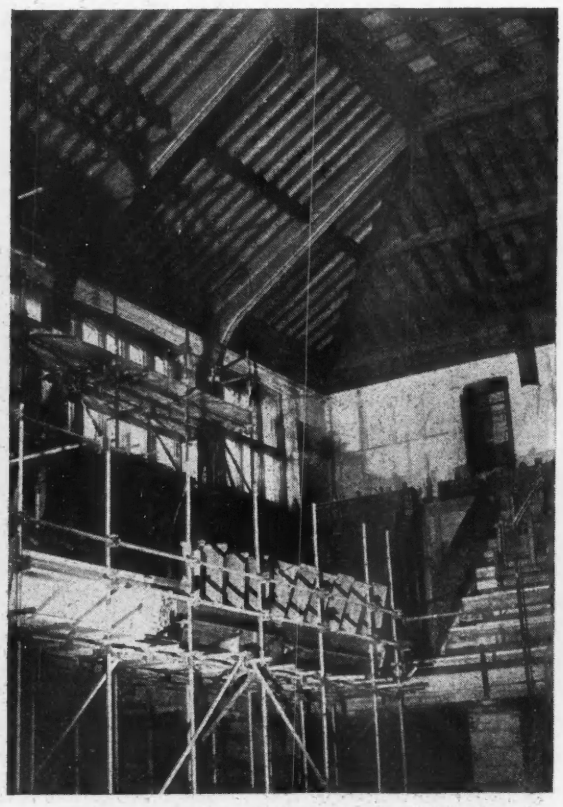
**Materials and Furnishings.**

The new buildings, both internally and externally, have been faced with a variety of stones, the principal one being Clipsham stone quarried in Rutland. Some of the ancillary accommodation, principally in the Cloisters, will be built of Portland stone with internal facings of Caen stone to match the existing work. Stone pavings are being carried out in Hadene and birdseye Hopton Wood.

The entrance to the Chamber from the Commons lobby is through an archway known as the Churchill Arch, built from



**One of the Division Lobbies, panelled in Empire woods.**

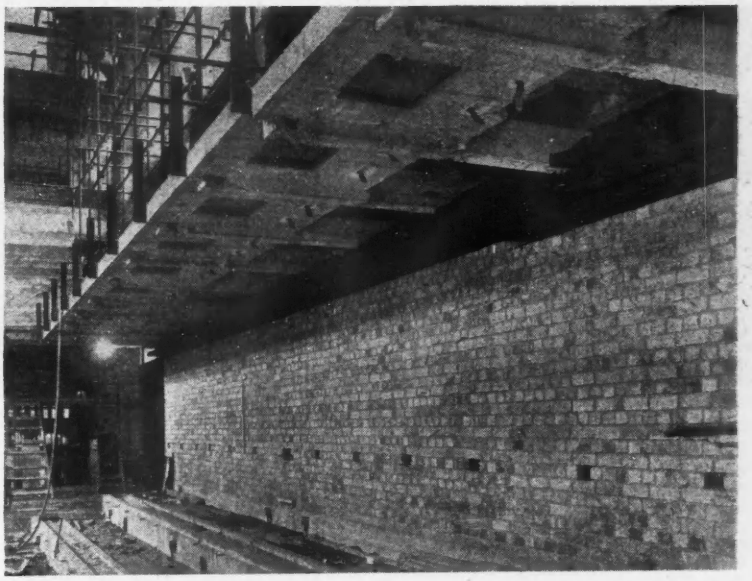


**Looking towards Press Gallery, showing detail of roof.**

the carefully preserved though considerably damaged stones which existed in this position after the bombing. They have been carefully rebuilt as a memorial to the occasion.

A feature of the complete Chamber and Members' rooms will be the furnishings, etc., which form gifts from all parts of the British Empire.

All joinery is made from English oak cut and prepared in the Shropshire district. It has been carefully dried to a very low moisture content and has been maintained in this condition during the process of the manufacture of the joinery and after fixing in the structure of the building. Temporary heating has been provided during the building operations to maintain, so far as possible, an even temperature and humidity. In the Chamber the benches are to be upholstered in green hide, and the floor covered by a specially woven green carpet. An interesting system of sound amplification has been installed under the direction of Messrs. Oscar Faber and Partners, and co-ordinated by them. Generally speaking, it is a replica of one already installed in the present House (*i.e.*, the House of Lords Chamber), to the instructions of the Ministry of Works. The system consists of a number of microphones, the appropriate one to be selected by an operator, and miniature loudspeakers which are built into the woodwork, approximately one loudspeaker to every two occupants. The system is not a relaying system for transmitting the speeches anywhere else, and is best described as reinforcing the natural speech within the Chamber.



**View in Chamber (taken January, 1949) looking south, showing (under the Gallery) the inlets for air-conditioning.**

## Engineering Services

The design of the heating and ventilation to the Chamber conforms to the best practice in air-conditioning. In the old House all the air was introduced through gratings in the floor and exhausted through the roof, so that the main airflow was vertical. This system had the disadvantage that any dirt or dust carried in by Members' feet was either discharged through the gratings or left on the carpet, and then became incorporated in the uprising air currents. To overcome these disadvantages, the floor of the new Chamber is solid and the air is introduced from the sides instead of from below.

The following notes are contributed by Mr. J. R. Kell, A.M.I.Mech.E., a partner of the consulting engineer, Dr. Oscar Faber:

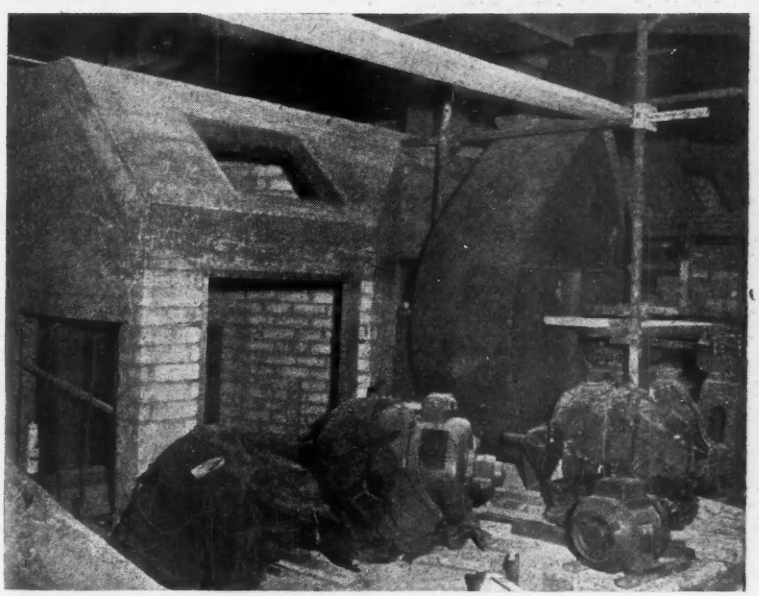
The ventilation of the old Chamber had never proved satisfactory, as is evidenced by the numerous Royal Commissions, committees and experts who were appointed from time to time to examine and report. The history of the complaints and suggested remedies are too long to go into here, but it is strange that in spite of much good advice, little was done over a hundred years by way of improvement; indeed, the main features remained the same as at the beginning.

The system as it existed in 1941 consisted of a fresh air intake on the River Terrace, whence the air passed through a rudimentary bank of water sprays and along a tiled passage to a large cased fan in the vaults under the Chamber. The fan delivered into the air over steam-heated coils and through a "fog-filter" made up of loose cotton wool about 4 in. thick. This filter was by-passed except during foggy weather, on account of the much reduced air flow which it caused. From the vaults, the air passed through gratings in the floor of the Chamber, which were covered with open-mesh matting. A second fan in the roof space provided the exhaust.

With this system large quantities of air were introduced. It suffered from the inherent defects associated with delivering air over the feet and thereby cooling them, and at the same time lifting the dust and dirt from the floor into the atmosphere to be breathed. It was said that the conditions favoured hot heads and cold feet, a state not altogether desirable for a body of legislators!

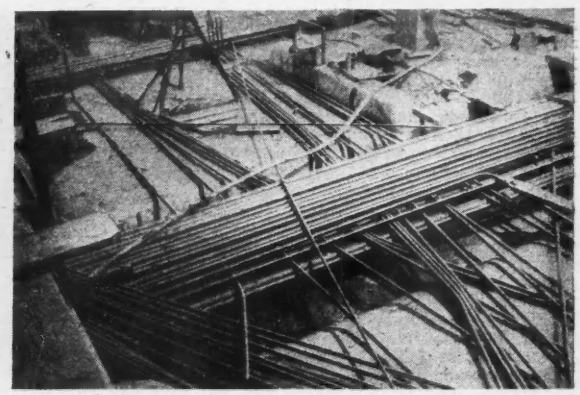
In the new House it has been decided to introduce the air horizontally above head level under the gallery and under the roof, and to exhaust it near the centre of the ceiling and also from near the floor. To minimise the danger of draughts, the inlet velocities have been kept low, and in addition the ducting has been so arranged that the air can be blown in alternately from one side for a predetermined period, and then from the other side for a similar period. The direction and strength of the air movement will thus be continually changing, with the object of inducing a sensation of freshness in all parts of the Chamber.

Two air-conditioning plants are provided for the Chamber, one for the Floor and one for the Galleries. Six other plants deal with the offices and conference rooms, Press accommodation and other ancillary departments associated with the working of the House. Each plant consists of a viscous air filter followed by an electrostatic air filter, a finned tube air-cooler for sensible cooling or dehumidification, followed by glass



**View in E plant room above Commons Lobby.**

Duct space D, showing conduits at high level.



A view showing the complexity of the conduiting.

eliminator plates; and then, in order, a finned tube heater battery and humidifying sprays. The various components are housed in a brickwork casing the inside of which is tiled for ease of cleaning. The fan for each plant is placed upstream or downstream as convenient. A steam heater battery is provided in each of the fresh air intakes to preheat the air in abnormally cold weather.

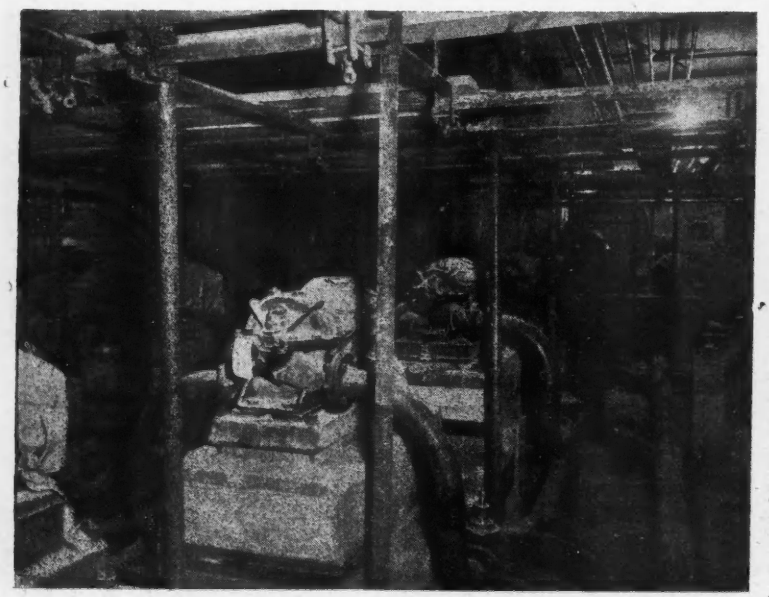
The heating medium for the main heater batteries is hot water at about 180 deg. F. flow. For the cooler batteries, a calcium chloride brine is used, leaving the refrigeration plant at a temperature of about 28 deg. F. The latter comprises two reciprocating compressors using Freon-12. The brine is stored in a large cylinder to act as a cushion to smooth out the fluctuating requirements of the various plants. The condenser water will be cooled by atmospheric forced draught coolers situated in one of the roof spaces.

In the important matter of controls, several unusual factors presented themselves. Apart from the day-to-day vagaries of the climate, there is a rapid and unpredictable variation in occupancy of the Chamber; at one time there may be an attendance of only 20 or 30 Members, whilst in the space of a few minutes this may be increased to 200 or 300 should some important debate commence. Or again, the Members may leave the Chamber entirely for a Division, but the galleries may remain filled. There is the further complication that some of the Members may have been in the Chamber for several hours, whilst others have just entered and will not be acclimatised to the atmospheric conditions. Purely automatic controls, which react only *after* the conditions have commenced to vary, were not considered to present a complete solution to the problem, and it was therefore decided to centralise all the plant controls in one main control room, manned by an engineer, and to give him a large measure of manual control over the operation of the plants.

The intention is that he will be able to anticipate sudden changes in occupancy within the Chamber by setting the controls accordingly. For his better guidance, a periscope is provided through which he can view the Chamber, while there is also a loudspeaker relaying the proceedings to the control room. The controls are electrically operated, and each item of the plant, such as the heater, cooler, etc., has its own controller normally set at "automatic," but capable of being inched open or closed to any desired extent, and left in that position, thus over-riding the normal demands of the control system. In addition, the operating level of the control system as a whole is reset automatically so as to limit the differential between inside and outside during the cooling period.

Further controls enable the engineer to vary the volume of air delivered to the Chamber, and to reset the temperature range to some higher or lower level. During an all-night session, for instance, it has been found that a higher temperature is desirable due, no doubt, to the lower metabolism of the human body in the small hours.

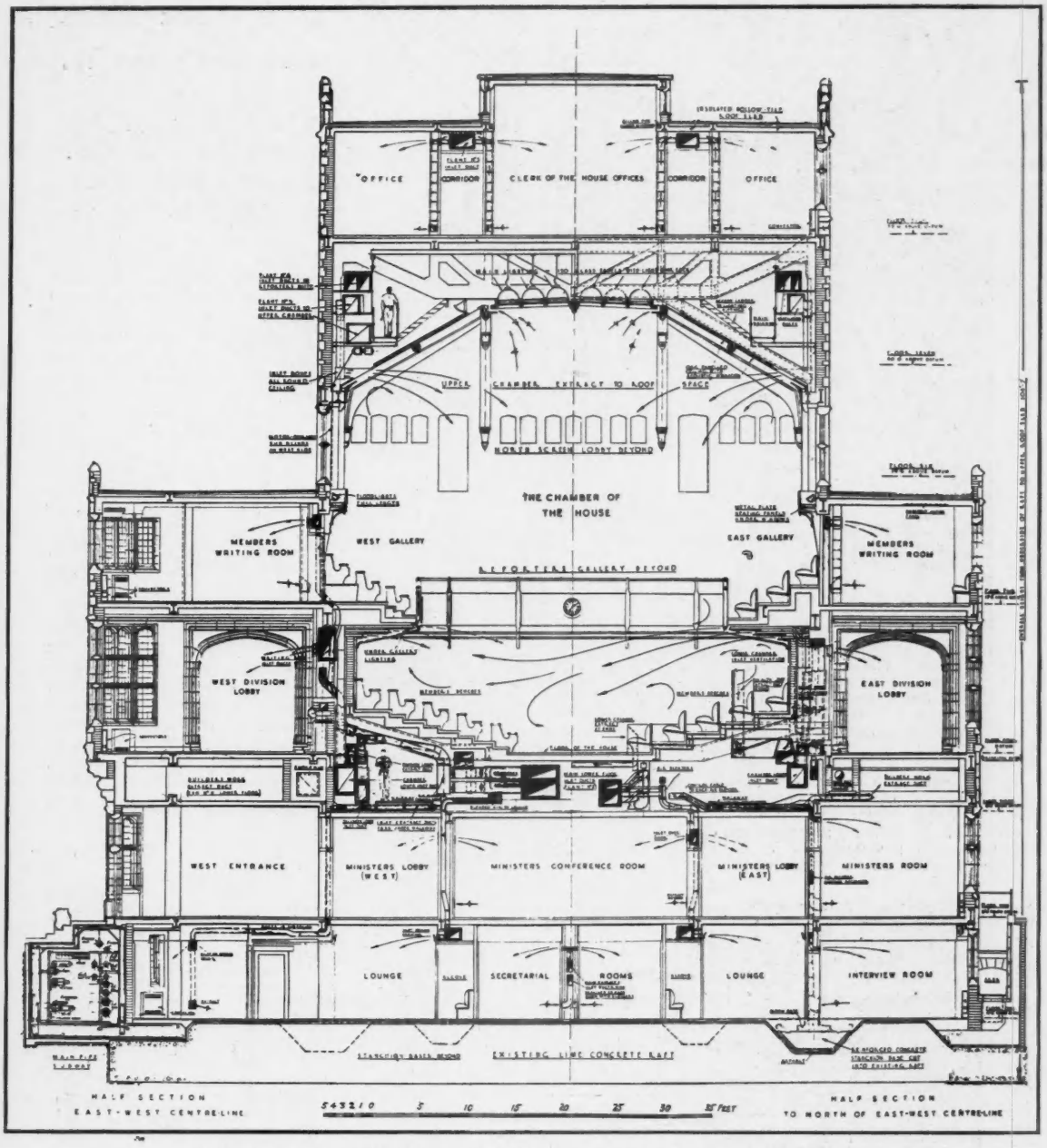
The offices and conference rooms presented a different problem. Any one of these numerous rooms may be filled to capacity for a time, whilst others remain but sparsely occupied. A plant of the double duct type has been provided, one duct supplying cool and the other warmer air. Each room has a blender so that any proportion of air can be taken from either duct according to occupancy or other heat gain. The various other plants also have special and interesting features determined by the particular requirements to be met.



The pumps in B plant room.

The contractors engaged are: Demolition, James Griffiths; foundations, Trollope and Colls, Ltd.; steel, Redpath Brown and Co., Ltd.; general contract, J. Mowlem and Co., Ltd.

Sub-contractors and specialists are: Chamber joinery, Green and Vardy, Ltd.; Division lobbies and Commons lobby, Fredk. Sage and Co., Ltd.; other joinery, J. Mowlem and Co., Ltd.; bronze windows and ironmongery, James Gibbons, Ltd.; heating and ventilating, Benham and Sons, Ltd.; electrical installation, Troughton and Young, Ltd.; lifts, J. and E. Hall, Ltd.; sanitary fittings, John Bolding and Sons, Ltd., Shanks and Co., Ltd., and W. N. Froy and Sons, Ltd.; marble work, J. Whitehead and Sons, Ltd.; chamber lighting, G.E.C.; light fittings, Smith and Ansell, Ltd., and Osler and Faraday, Ltd.; flooring, Acmé Flooring Co., Ltd.; annunciators, Standard Telephones and Cables, Ltd.; asphalt, Highways Construction Co., Ltd., and Limmer and Trinidad Lake Asphalt Co., Ltd.; insulation, Newalls Insulation Co., Ltd.; blinds, F. C. Hoskins and Co., Ltd.; and Speaker's chair, H. H. Martyn and Co., Ltd.




**Half-section east-west centre-line and half-section to north of east-west centre-line.**

# REBUILDING OF THE HOUSE OF COMMONS

## SIR GILES GILBERT SCOTT, O.M., R.A., P-P.R.I.B.A., ARCHITECT

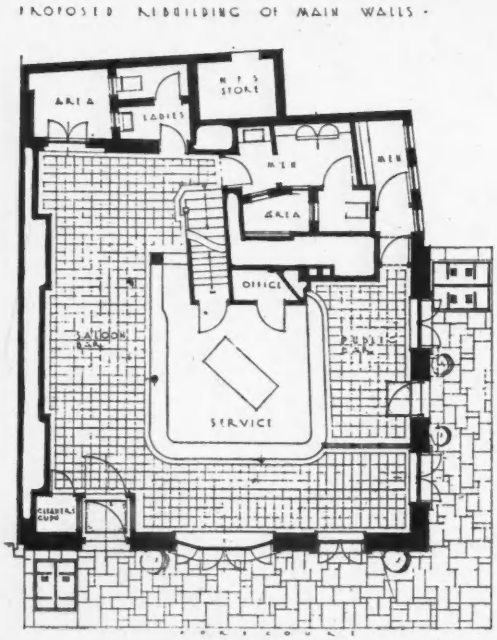
## DR. OSCAR FABER, O.B.E., D.Sc., CONSULTING ENGINEER

# Reconstruction of a Public House Blandford Street, W.

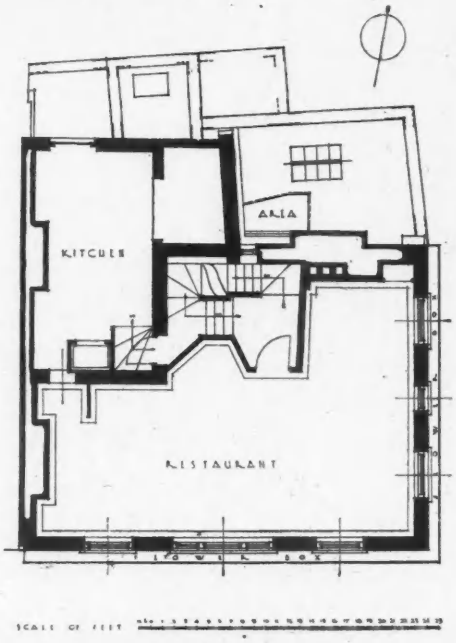
A. & V. BURR, F. AND L.R.I.B.A., ARCHITECTS.
JOHN J. HICKIE, CHIEF ASSISTANT IN CHARGE

The exterior as reconstructed.

OWNED by the Wenlock Brewery Co., Ltd., and now leased to the Coman Catering Co., this house—the "Wallace Head"—is situated at the corner of Blandford-street and Chiltern-street, W.1. Heavily corniced and stucco-faced in the tradition of the early 1800's, its dilapidated condition was the subject of much repair for many years by the brewery. Recently the brewery instructed their architects, Mr. Alfred Burr, F.R.I.B.A., F.R.San.I., M.Inst.R.A., and Mr. Vincent Burr, F.I.A.A., L.R.I.B.A., P-P.Inst.R.A., A.I.Struct.E., to have the stucco work, etc., repaired to the upper fronts. Upon exposure, however, the brickwork was found to be in a highly dangerous condition, while the removal of the fascia boards revealed that the bressumers were highly deflected and the storey posts and columns were unsound. The generally unsafe condition of the premises resulted in a




Ground-floor plan.




First-floor plan.

**Detail of main front as reconstructed.**

Dangerous Structure notice being issued by the District Surveyor.

The brewery company in consequence instructed their architects to prepare a redesign for the elevations and, in close collaboration with Mr. Venner and Mr. Schooling, chairman and director respectively of the brewery company, the present effect was achieved.

It was necessary to rebuild the external walls from new foundations. It was also essential that the business of the house, as far as the bars were concerned, should be unimpaired by structural alterations, and happily this was able to be achieved by the rebuilding separately of the external walls, using alternatively the entrances of the public and saloon bars as the situation demanded. It was felt that the new elevations should generally conform with the neighbourhood.

The facing brick was chosen with care, and its golden-brown texture and cut are enhanced with a neutral deeply recessed pointing. The timber sashes, painted a delicate cream, show a 2¼ in. reveal. The

**The restaurant, at first floor.**

general fenestration is most successful, considering the difficulties of marrying up with the existing internal partitions and structural members which, under the building licence, had perforce to remain as existing. The fascia and parapet cornices are of reconstructed stone, and the flower-box over the fascia is lead-lined and drained, having lift-out boxes in about 3 ft. lengths. The timber dentils and their background are in two shades to contrast predominantly with the floral decoration. The bar windows—bronze extruded on hardwood—are all able to be fully opened.

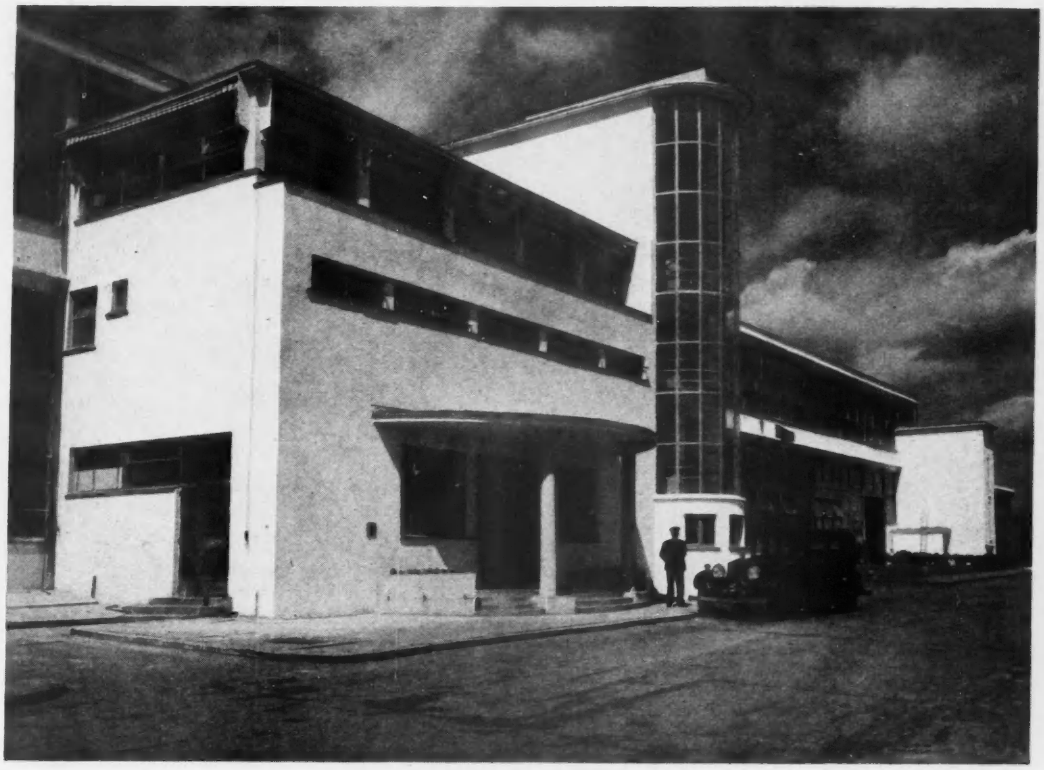
**The house before reconstruction.**

The origin of the name " The Wallace Head " gave rise to some speculation. It was at first thought that the house derived its name from the near-by Wallace Collection of *objets d'art* in Manchester-square, but research proved this to be not the case as the house existed long prior to the establishment of the Collection. Further research pointed to a more likely origin. Sir William Wallace, the popular national hero of Scotland (1270–1309), was taken to trial in Westminster, found guilty of treason by the King's Justice and was hanged, drawn and quartered at Tyburn, the site of which is not far from Blandford-street. It seems certain that the name of this house was derived from Sir William Wallace and the bronze plaque of his head, modelled from his statue in Aberdeen, commemorates this great Scottish patriot.

The tablets by the entrance doors are in bronze, as is the fascia lettering, and the decorative hanging sign, again depicting the head of Wallace, in bronze, is in gorged iron. The internal decorations and furnishings were the close interest of Mr. Coman. The chief assistant architect in charge was Mr. John J. Hickie, M.Inst.R.A.

The builder was Mr. B. W. Stiles, and sub-contractors and suppliers were : Haskins, bronze windows and craft metalwork ; Steel Scaffolding, Ltd., scaffolding; Finnis, Ruault and Nicholls, Ltd., facing bricks; Harvey Bros. (Masons), Ltd., York stone paving; E. Spaull and Co., Ltd., glass and earthenware; Signcrafts, Ltd., interior signs; Restall Upholstery, Ltd., upholstery; and Commercial Renovations, re-covering of furniture.

## RECONSTRUCTION OF A PUBLIC HOUSE, BLANDFORD STREET, W.



**Detail view of front elevation.**

# FACTORY AT COVENTRY. W. S. HATTRELL AND PARTNERS, ARCHITECTS

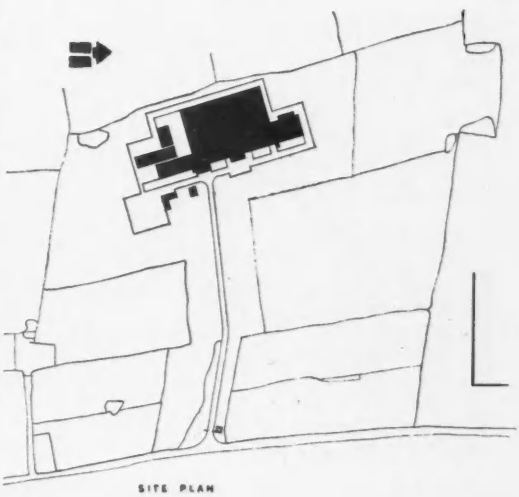
THE site of this factory for Messrs. A. C. Wickman, Ltd., is in open wooded country at Tile Hill, about four miles outside Coventry. It is fairly level with a slight slope to the eastward. The original factory was completed just prior to the war for the manufacture of machine tools and has since been extended.

PLAN : The factory was originally planned to a U-shape, each leg being 60 ft. wide, constructed in two 30 ft. bays, and the whole of the factory area was designed to be served by cranes spanning these bays. This type of plan was adopted as it suited the production sequence and also obtained the maximum amenity value from the countryside by way of continuous windows on all sides. A revised production layout has since resulted in the residual space between the return bays having to be filled in to provide additional production area.

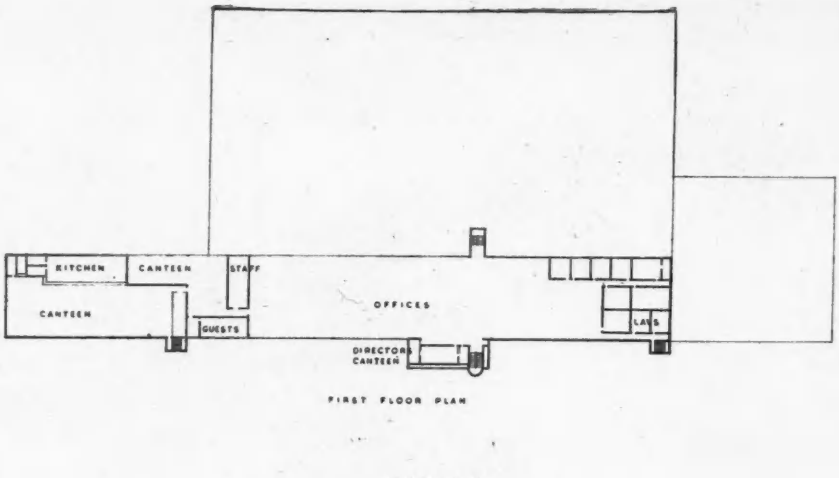
Employees enter the factory by way of staircases at two separate points, which lead to cloakrooms and lavatories at basement level. From these cloakrooms, staircases lead directly into the production areas. Canteens and offices are situated at first-floor level over the front section ; on this floor also are directors' dining-room and staff lavatories. The heating chamber was sited at basement level with fuel bunkers feeding the boilers by means of automatic stokers, the bunkers being so planned that they are fed direct from tipping lorries.

CONSTRUCTION : The building is entirely steel framed, and the basement areas are constructed in waterproofed reinforced concrete. The windows are in galvanised steel left unpainted, being linked to the stanchions by pressed steel galvanised casings. External wall surfaces were finished in " Brizocrete," and although the whole factory was almost immediately camouflaged at the outbreak of war, the exterior has since been restored to its original finish.

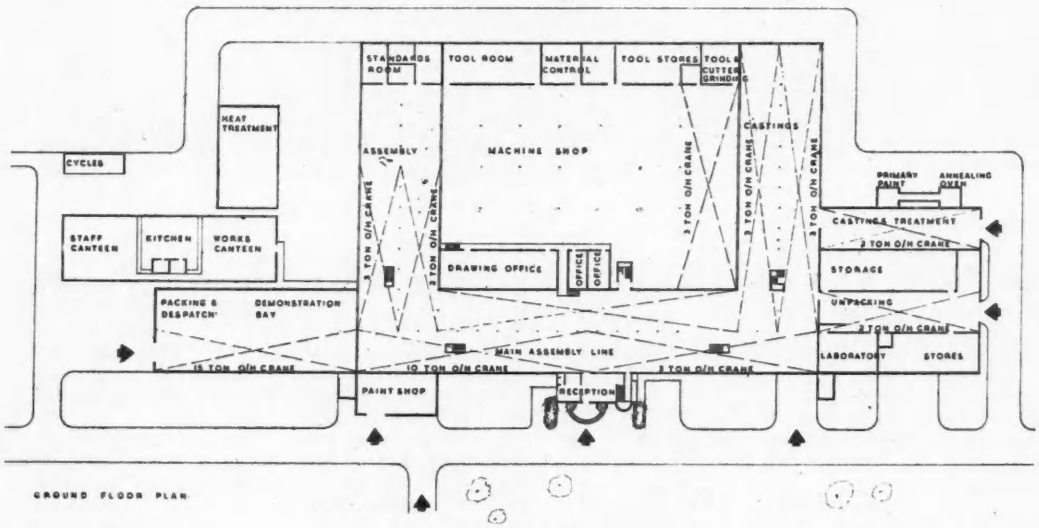
The cloakrooms, offices, etc., are completely air-conditioned, heating being provided in the factory by unit heaters with fresh air ducts from flat roof level. All machines are electrically motored, the electrical services being provided in ducts to the machine lines, thus obviating overhead cables.



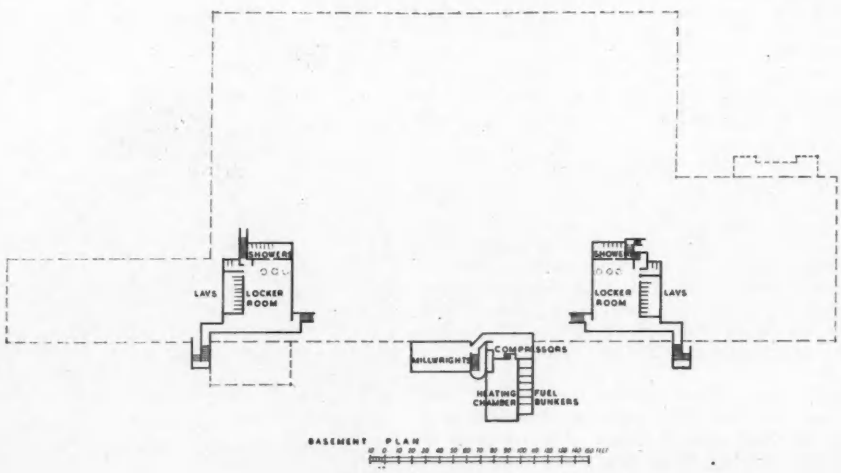
SITE PLAN




**Mezzanine and first-floor plans.**




**Ground-floor plan.**




**Basement plan.**

General view of main elevation.

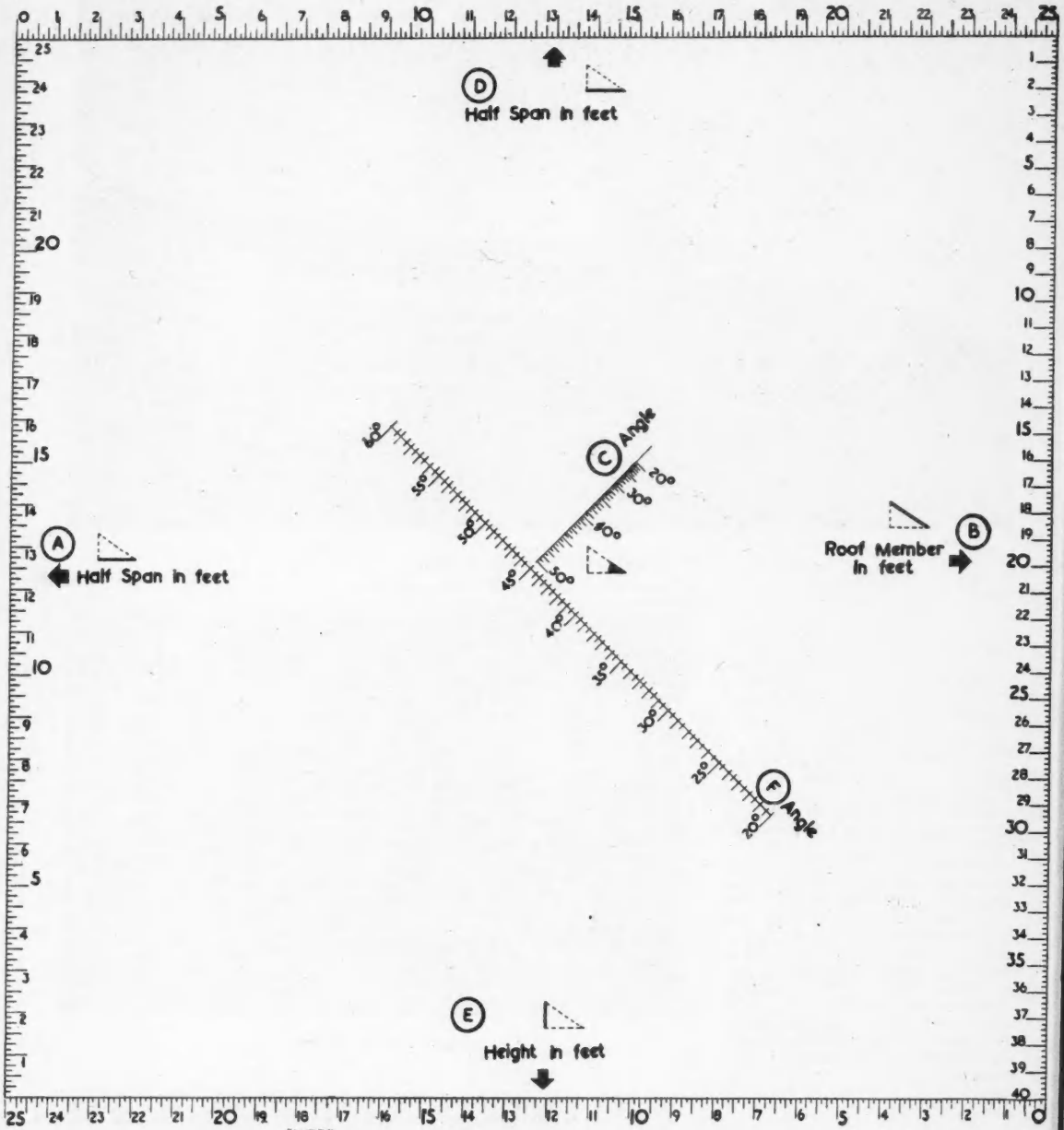
Interior view of office.

Main contractors were Messrs. W. H. Jones and Son, Ltd., of Coventry. Sub-contractors and suppliers engaged were : Steelwork, Boulton and Paul, Ltd., Norwich ; precast beams, Concrete, Ltd., Leeds; reinforced concrete, Holst and Company, Ltd. ; windows, Henry Hope and Sons, Ltd. ; heating and ventilation, G. N. Haden and Sons, Ltd. ; sewage disposal plant and sanitary fittings, E. Farrer and Company, Ltd. ; flat roofing, Standard Flat Roofing Co., Ltd. ; metal partitions, Art Metal Construction Co., Ltd. ; terrazzo work, Jaconello, Ltd., Birmingham ; floor finishes, Korkoid, Ltd. ; and wood panelling, H. H. Martyn and Co., Ltd., Cheltenham.

## FACTORY AT COVENTRY

**W. S. HATTRELL AND PARTNERS, ARCHITECTS**

Interior view of factory.




connect any two known values on scales A, B or C to find third value.
connect any two known values on scales D, E or F to find third value.
for eaves overhang read feet as inches.

## NOMOGRAM FOR ROOF MEASUREMENTS

By means of this chart, it is possible to check quickly the measurements and angles of a roof frame. Take, as an example, a multiple of the well-known triangle with sides 3, 4 and 5 ft.—say 12, 16 and 20 ft. Use a straight-edge or a fine thread to connect 16 on the half-span scale with 12 on the height scale and notice that the connecting line crosses the angle scale at 36° 50′, then the triangle is completely solved by connecting 16 on the half-span scale, through 36° 50′ on the angle scale, to read 20 on the roof member scale.

Take into account the thickness of ridge-boards when determining the length of rafters. The chart may be used for the lengths of hip rafters and jack rafters. Any measurement (but NOT an angle) may be multiplied or divided to obtain a corresponding result for the other side.

Devised by L. A. E. CHAPLIN. Copyright *The Builder*.

# HEATING RESEARCH AND HOUSE DESIGN

## Mr. Richard Eve's Paper to A.S.B.

TEN conclusions for use by architects in the draughting rooms in designing heating and hot water services in the small house were outlined by MR. RICHARD EVE, B.Arch., A.R.I.B.A., in a paper read to the Architectural Science Board at 66, Portland-place, W.1, on December 13. Mr. Eve said: When the first results from the heating trials of the Building Research Station were presented to the Architectural Science Board a year ago, the paper given then was confined mainly to a statement of the first year's findings. In the paper presented to-night my endeavour is to draw conclusions from these trials and to outline how, after studying the B.R.S. data, I suggest that houses of around 1,000 sq. ft. of floor area can be heated most suitably. One difficulty confronts us: the human factor in heating has not yet been accurately assessed. However, in the present state of the world it is apparent that the human factor revolves largely around the family finances—for most of the population. Indeed, all of us know only too well that the problem is essentially an economic one. In this country we rely upon coal for heating. By far the major part of the fuels that we use in our houses derives from this source. In the battle that has endured only too long between gas and electricity we have sometimes lost sight of this factor. Now, when the country has decided that these are best owned by the people themselves, the picture changes. These two great industries become but branches of a single one, which could be called Coal Conversion. Competition might now be restricted to the field of research and development; in the merchandising field a united policy of selling whichever appliances use coal at the highest efficiency for the task in hand would serve the consumers best.

It is not only a matter of running costs, however. The installation of appliances for heating the house, the hot water and doing the cooking, including flues, ducts, vents, hot water cylinder and piping, etc., amounts to between 10 - 15 per cent. of the total costs of the building.[1] If, therefore, we are too lavish we will increase the rental of a property during the life of that building. On the other hand, some of the systems may condemn the householder to running expenses that he can ill afford. It is difficult to ascertain the income of this client, who lives in a house of 1,000 sq. ft., and to find what proportion of it he spends on heating. As far as I can learn,[2] for inhabitants of houses of the three-bedroom type, of which we are speaking and which can reasonably be occupied with something between three and six persons, the family incomes ran somewhat as follows, for April, 1947: nine out of every ten households received £10 a week or less; six out of ten had £5 10s. or less; and two in ten had £4 a week or less. A total annual fuel bill of between £20 to £25 (7s. 6d. to 9s. 6d. a week) represents 10 per cent. of the income of two out of every nine households that might inhabit such houses. For this it is very hard to buy enough heat to warm the house, even when insulated to the better post-war standards. The first year's operation of the houses at Abbots Langley showed that at representative London prices for April, 1948 (a year later, please notice), there were only five systems that did the work for this sum of between £20 - £25 a year.[1, 2] Of these, two were reasonably economical to build: one system had an open fire with back boiler, and the other a free standing openable stove with back boiler. The cooking could be either by gas or electricity. Three others which showed annual fuel costs of this order were two central heating systems and a prefabricated heating unit, but the extra first costs of these are substantial.

### National Average Fuel Cost.

That we are searching for heating systems in this order of annual fuel cost is further confirmed by an estimate of the national average, which is £27 a year per household;[3] recalling that this takes in houses of all types, the figure of between £20 - £25 seems a reasonable objective for a range to cover the inhabitants of 1,000 sq. ft. houses. Unfortunately, one out of every five of these will have to be at the lower end of the scale; so that the type of system is one that will cost around 7s. 6d. to 9s. 6d. a week to run. As 2s. 6d. out of this is the amount estimated to be required for cooking, it means that 5s. a week is available for space heating and hot water at the lower end of the scale. To accomplish this it is probably necessary to have only the lower floor fully heated and to leave the heating of the bedrooms to the vagaries of the "tramp" heat for the lower incomes, while allowing additional heating to be added for those who can afford it.

If whole house heating were set as the objective, a very high order of thermal efficiency would be necessary. The sort of building that results is seen in Fig. 1, which is a view of part of Parkchester, a real estate development by the Metropolitan Life Insurance Company in New York City.[4] Here 58 buildings house over 12,000 families, and provide them with neighbourhood facilities such as shopping centres, a cinema and a garage for about 3,000 cars—in other words, a complete new town. About 11,000 of the dwellings are three- and four-room flats with living rooms of 225 sq. ft. and bedrooms of between 130 and 190 sq. ft. The average cost of heating each dwelling in 1946 was 3s. 5d. a week, including the cost of heating all the neighbourhood facilities, and this in the city of which it is said "a fifty cent. meal costs seventy-five cents." These are the most economically heated buildings I have encountered in my work, particularly as the mean temperature in all rooms is probably 70 F., if not more, and the winter severer than our own.

This low cost of heating is achieved partly by blocking the dwellings into large buildings so that the amount of exposed surface through which heat can be lost is greatly reduced. It is often forgotten that a three-storeyed terrace house offers but half the exposed surface of a detached bungalow of the same size and about 70 per cent. of that of a semi-detached house. At Parkchester the surfaces that are exposed are extremely well insulated; the walls are 16½ in. brick with a vapour barrier, and backed with 1-in. glass wool insulation plastered. This gives a U value of about 0.10 BTU/per hr. per sq. ft./per °F., which is probably a higher degree of insulation than required in this country. The

**Fig. 1** (*above*).—**Parkchester, Bronx, N.Y. City.**

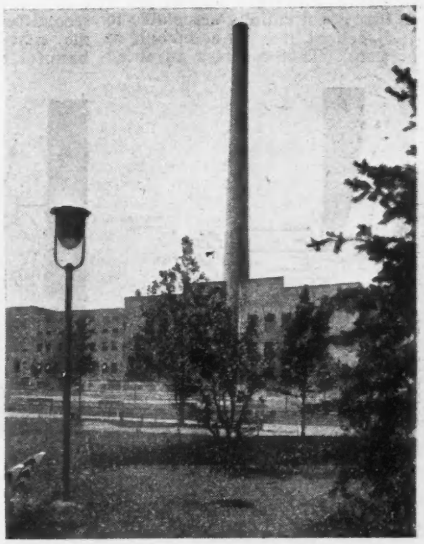


**Fig. 2** (*right*).—**The building housing the central-heating plant, Parkchester.**

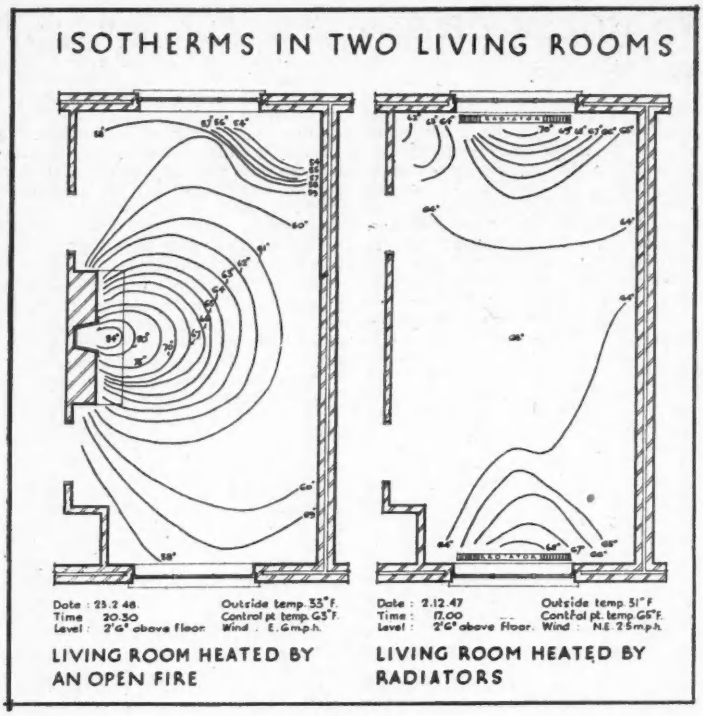

ISOTHERMS IN TWO LIVING ROOMS
Date : 23.2.48.
Time 20.30
Level : 2'6" above floor.
Outside temp. 33°F.
Control pt. temp. 65°F.
Wind : E. 6 m.p.h.
LIVING ROOM HEATED BY AN OPEN FIRE
Date : 2.12.47
Time : 17.00
Level : 2'6" above Floor.
Outside temp. 51°F
Control pt. temp. 65°F.
Wind : N.E. 2.5 m.p.h.
LIVING ROOM HEATED BY RADIATORS

Fig. 3.

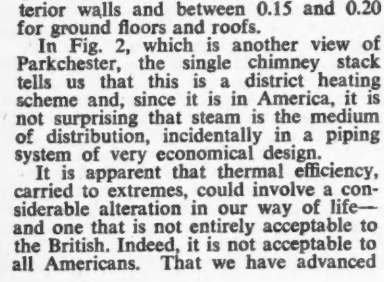
B.R.S. have been recommending insulation since 1934, and their trials have delineated the degree that is effective economically. Shortly they will be summing up these trials, taking into account the effect of occupancy. Pending this information our objective for houses of around 1,000 sq. ft. floor area should be U values of between 0.20 to 0.25 for exterior walls and between 0.15 and 0.20 for ground floors and roofs.

In Fig. 2, which is another view of Parkchester, the single chimney stack tells us that this is a district heating scheme and, since it is in America, it is not surprising that steam is the medium of distribution, incidentally in a piping system of very economical design.

It is apparent that thermal efficiency, carried to extremes, could involve a considerable alteration in our way of life—and one that is not entirely acceptable to the British. Indeed, it is not acceptable to all Americans. That we have advanced some way down this road already is fairly evident, for large blocks of flats are with us to stay. If one can judge from the published pictures, few of ours have had thermal efficiency as their objective. The forest of chimneys only too often apparent suggests that in heating other considerations weigh—the prime one being to retain the open fire. So much pride and prejudice has already been lavished upon the open fire that, perhaps, I may expend a little more on my own account. My prejudice is in favour of the open fire—but purely as an æsthetic feature. What I like about an open fire is the visual effect. What I dislike about the open fire is the type of heating it gives. But the visual aspect is at its best when wood is being burnt and there is a cheerful noise and sparkle. Compared to this the coal fire seems a second best, and further, the smoke from the coal is unpleasant and extremely harmful to buildings. As to the gas or electric devices, they aren't open fires—they are well-named high temperature radiant heaters, in which most of the disadvantages of an open fire are retained. There is further the matter of fire hazard connected with all and any types of open fire. Should anyone feel complacent in this matter, I suggest that they ponder Colebrooks' paper called "The Prevention of Burns and Scalds," in the July 30, 1949, issue of *The Lancet*.[3] This may remind all of us, architects and appliance designers for *all* fuel types, of the degree to which we are failing in our duty. As designers we can at least provide the methods for fixing screens easily and firmly.

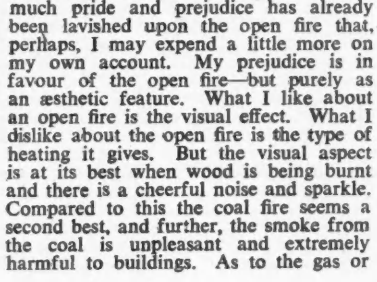
**High Temperature Radiant Sources.**

It has been said that high temperature radiant sources give a personal warmth. They do; they give a warmth over a limited area which a person can achieve by walking into that area. Fig. 3 shows that comparison between the air temperatures in two living-rooms at Abbots Langley—one heated by an open fire and one by radiators. With the unimproved open fire, one is condemned in winter to activity within the fire-side circle, but if the heat of this fire can be spread to other parts of the room or house, activities need no longer be curtailed. You can go and do fret-work in the dining-room or surrealist painting in the bedroom, and in other ways prolong the activities of the day, should you so wish. However, so strong is the desire for an open fire that the technicians of this country have produced new appliances which make a reasonable compromise between the limits of the open fire and the efficiency of central heating. It is these that offer the next step in the evolution of efficient house heating. You know these appliances—the openable stove (Fig. 4), the closeable fire (Fig. 5), the improved open fire (Fig. 6)—and installed in houses with improved weather protection the chances are greatly increased of obtaining equable temperatures over much of the house for reasonable expenditure. However, the whole *modus operandi* of house heating becomes a reversal of our pre-war method when we probably hit an all-time low in extravagance and inefficiency in the matter. Whilst those who hadn't the price went cold, those who could afford it wasted much of the heat that was in the coal they burnt. The inhabitants sought comfort by exposing themselves to high temperature radiant sources and any air that was warmed was allowed to drift away. That this was wasteful was



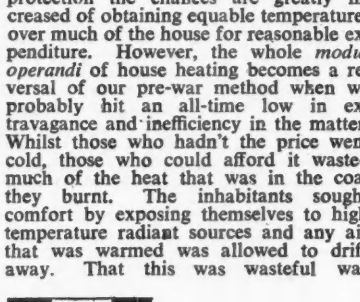

FREESTANDING OPENABLE STOVE
with back boiler

Fig. 4.




CLOSEABLE OPEN FIRE
with back boiler and convected warm air

Fig. 5.




IMPROVED OPEN FIRE
with back boiler and hood for overnight burning

Fig. 6.

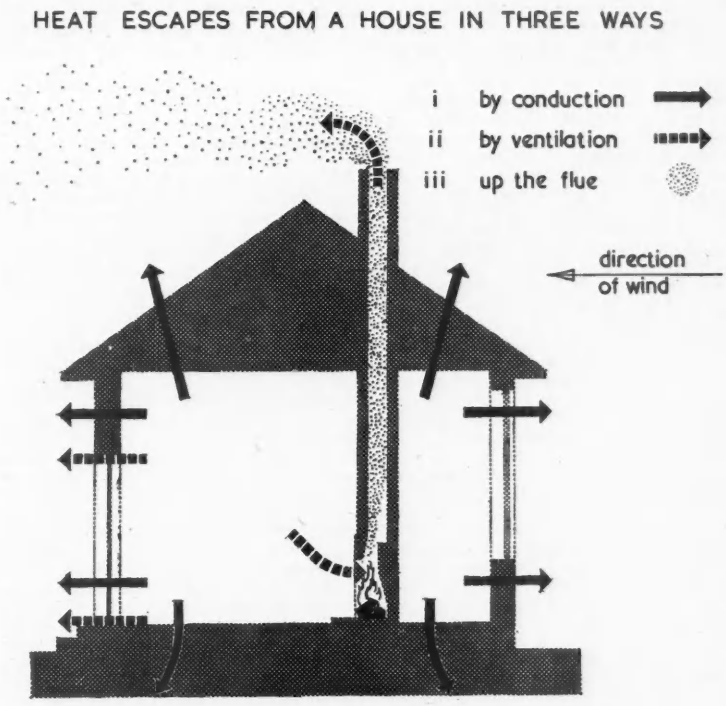



**Fig. 7.**

realised by many people before the war but with the post-war era official recognition was given to the need to conserve the heat. The three major sources of heat loss in a house are, of course, up the chimney in the flue gases, by conduction out through the walls, ground floor and roof (the "exposed" surfaces), and by convection through the cracks and crannies around windows and doors and any vent holes (Fig. 7).

Recovering or retaining the heat lost up the flue is primarily a matter of appliance efficiency, and is too large a subject and too far beyond my competence to attempt to review now. There are, however, organisations which can advise you. To name two—the Coal Utilisation Joint Council and the Domestic Fuel Organisers of the Ministry of Fuel and Power. As architects, what we really require is a list of all appliances for all types of fuel which, at least, tells us if these have passed the British Standards tests and indicates the range of efficiency to be expected from any type. Having chosen well, insisted upon good installation instructions and seen that they are carried out, the architect can help by ensuring that the flue is inside the "insulated envelope." Recall that some heat must go up the flue or the fire would not burn; this being so, it may as well be used to help heat the house while in transit. This consideration often leads to a proposal to use metal flues. My advice is not to attempt them at present. Their durability is still in question. If, in spite of this, they are to be specified, I suggest that you consult B.R.S. on the fire precautions that should be taken and carry these out rigorously.

**Ventilation Facts.**

Insulation has been dealt with earlier so that we turn to the third factor, which is ventilation. The expert in this field, J. B. Dick, of the Building Research Station, has presented a paper to the I.H.V.E. on the results of his investigations of ventilation during the last two years at the Building Research Station. I cannot hope to do justice to this extremely valuable work now. At best I can but give you the conclusions I draw from his work. Last year the Building Research Station stated that in a small house a large amount of ventilation was occurring through the cracks around the doors and windows. It was shown that weather stripping on the exterior doors of the house would reduce the rate of air change by a significant amount. Dick's amplification of this work shows that it is the fit of the windows facing the prevailing wind that is of importance. A well-fitting window does not require scientific definition. It is simply one of which the sash comes up tight against the frame when the window is closed and does that all round. It is certain that windows in the experimental houses are not tight-fitting and apparently reasonably certain that this is typical of conditions in other post-war houses throughout the country: and it appears that the windows at Abbots Langley are as poorly fitting as the cheapest type of factory sash in use in America. It is obviously possible to save fuel by spending more on better fitting windows. The amount of openable sash can be restricted, and should be. The total amount of total window area has been left very largely in the hands of the architect and the demands of natural lighting. This arises from the study by Billington [7] on the heat gains by solar radiation, but it should never be forgotten that the heat gained by the sunshine, if there is any during December and January, will not necessarily be available in the evening; it may have been thrown away by opening the window, and then of course there is nothing left to off-set the cold that penetrates the glass area later. On the whole, if thermal efficiency is to be our objective, large areas of glass for rooms in houses around 1,000 sq. ft. are not acceptable. The general run of present window sizes are probably not far from the optimum, although there is as yet little experimental work by which to test this thesis. As to double windows and double glazing it is true that if you have large glass areas, you will have to use this in some form or other. If your window sizes remain reasonable, you are advised to spend your money on well-fitting windows all over the house rather than to attempt double glazing.

It sounds rather as though this leads up to a proposal to seal the house hermetically. Far from it. There is obviously need to supply a house with a certain amount of fresh air. The B.R.S. have shown that more than enough is coming from the windows and doors when closed. What happens if we do use much better fitting windows and weatherstrip the doors? And suppose that they become so well fitting that we do not get the amount of fresh air suggested by the Egerton Committee in their Report "The Heating and Ventilation of Dwellings"? [8] One is sometimes told terrible tales about what may happen if the air change rate is too low, and for all I know these tales may be true; what I fail to understand entirely is why the windows, in particular small opening lights, are not quite as satisfactory as any hole in the wall, which will be stuffed up anyway. I cannot see why the inhabitants of this kingdom should not be considered adequately adult to judge their own requirements in respect of ventilation.

The possibility of cross ventilation should be provided. This is usually ensured by designing so that each dwelling has at least two exposures. Grilles or vents in the doors or walls of rooms to a hall can be installed to ensure that the air can find its way through, but these vents may not be necessary. B.R.S. are assessing their value. It is still uncertain if in a small well-protected house any vents over interior doors are needed to ensure an adequate interchange of air within the house, so that a reasonable supply of fresh air is found in all quarters even with all windows and doors shut at wind speeds of above 10 miles an hour, and regardless of the direction of the wind.

The effect of the foregoing is to emphasise that, in a house that is well protected thermally, the barriers offered by internal partitions and internal doors to the movement of warmed air are of much less importance than in a poorly protected house. This is not to say that a room without any heating in it will be suitable for "sedentary occupations," but the B.R.S. results show that it will not be cold and will maintain a considerable temperature advantage over outside. This depends, of course, upon the amount of heat put into the house and how it is distributed—in other words the fuel and the system. The type of system that is envisaged is one that exploits the possibilities offered by the ability to retain warm air and this follows the general lines of the proposals of the Egerton Committee.

**Economy of Fuel.**

In the matter of fuels, the work of the Building Research Station has indicated that the most economical fuel for space heating for houses of around 1,000 sq. ft. is solid fuel—and that only one appliance burning solid fuel is economical in a house of this size. The published data [1, 3, 4, 5] show that gas or electricity is most economical for cooking when these are available. The data also indicate that a solid fuel space heater with a back boiler produces hot water more

economically than by servicing these two functions separately—whatever the fuel used for the domestic hot water. For the separate solid fuel boiler, providing nothing but domestic hot water, there is not much to be said in a house of around 1,000 sq. ft.; in a larger house, by servicing radiators for space heating, it may be very useful. Gas and electric water heaters are obviously desirable as auxiliaries when the space heater is not in use; they seem to me essential equipment for the lightening of the housewives' work. If at present we cannot afford them, let us at least design so that they may be included when better economic conditions prevail. With these brief comments I leave domestic water heating, except to remind you that insulation of tanks and flow and return pipes is essential.

The foregoing conclusions are based upon the unoccupied period in the B.R.S. experimental houses and these trials were carried out for an imaginary family of four living to what is named for simplicity the experimental routine. This routine has been called into question, it being claimed as excessive in the amount of space heating. To get evidence on this point is not easy; such data as are available from the occupied period at Abbots Langley are pertinent but far from conclusive because the figures for ten houses during one heating season are all that have so far been computed. The mean winter temperature for all these houses was 58.9° F. during the unoccupied period and 58.8° F. during the occupied period—showing therefore no difference. The mean winter temperatures for the individual houses ranged from 56.9° F. to 60.4° F. during the unoccupied period and from 56.2° F. to 60.7° F. during the occupied period—again showing no substantial difference. In nine of these ten houses the difference between the mean winter temperatures for both periods was less than 1° F.; the wider variation of about 4.5° F. in the tenth house is accounted for by surplus heat in the kitchen, which was conserved during the unoccupied period because the windows and doors were kept closed but which the housewife in search of comfort dissipated during the occupied period. The mean living room temperatures of all these houses lay between 59° F. and 61° F., and any savings in fuel were effected by lower temperatures in rooms other than the living rooms. I conclude, therefore, that the data obtained under the routine employed during the unoccupied period are not going to lead us very far astray. And these data indicate that the improved solid fuel space heating appliances will serve our ends.

In my view, the improved solid fuel space heater chosen should not be selected purely on the differences in running costs shown in the B.R.S. data, for these variations are not very large. The selection should be made on other considerations such as first cost, ease of handling, availability of the particular type of solid fuel, appearance, and so on. There are a number of points here that could be discussed, but I wish to draw your attention to but one. Since these appliances augment with radiant heat the heat they supply by convection, there is some advantage to those who like their open fires in having a wide angle of distribution of the radiation. An improved open fire has this advantage over an openable stove; it has a wider angle of distribution of radiant heat, as is shown in Fig. 8, where a polar diagram indicates the distinction. The appliance chosen will have a back boiler—as reasoned earlier. It will presumably face the main living space of the family, and to it it is often proposed to arrange a special route for the combustion air. If there are dangers that a draught will occur it is simpler to arrange a grating near the fire to the front hall rather than to instal underfloor ducts.

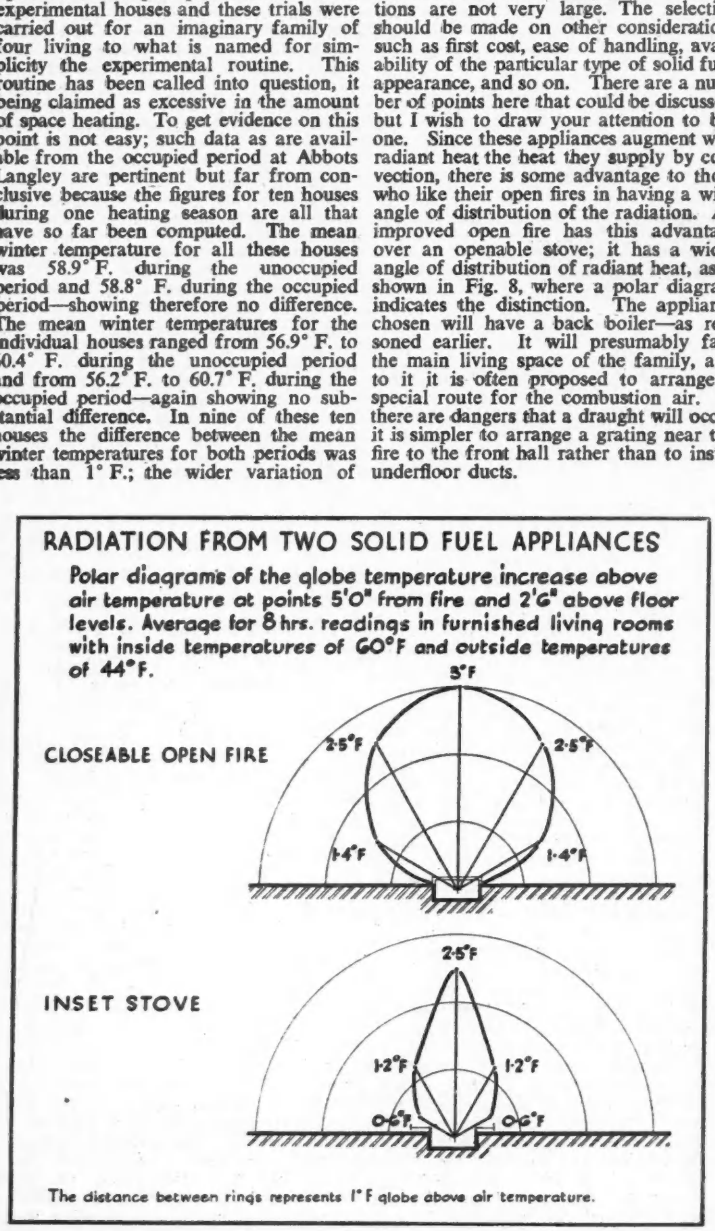

RADIATION FROM TWO SOLID FUEL APPLIANCES
Polar diagrams of the globe temperature increase above air temperature at points 5'0" from fire and 2'6" above floor levels. Average for 8 hrs. readings in furnished living rooms with inside temperatures of 60°F and outside temperatures of 44°F.
CLOSEABLE OPEN FIRE
5°F
2·5°F
2·5°F
1·4°F
1·4°F
INSET STOVE
2·5°F
1·2°F
1·2°F
0·6°F
0·6°F
The distance between rings represents 1° F globe above air temperature.

Fig. 8.

**Effect of Appliances on Plan.**

The decision to stick to one solid fuel heating appliance does not dictate the type of plan. It is quite possible to satisfy most of the plan types that can be concocted by a single improved solid fuel appliance but spaces cut off by partitions will have to have extra heat to be suitable for sedentary occupations. The problem is how to get it there without imposing high first costs and high running costs on those who can only afford to heat the lower floor. It is on this matter of the methods of distribution of heat that disagreement arises between the recommendations of the Egerton Committee and the results from Abbots Langley.

It was shown last year that the suggested systems put forward by the Egerton Committee' proved amongst the most expensive when installation and fuel costs are taken into account. If the routine employed in the tests maintained a higher mean house temperature than the lower incomes can afford the chief source of saving will not lie in the topping-up heat alone; for example, the houses employing gas or electricity for this purpose burnt only about £1-worth of fuel for topping-up, and this was usually confined to the bedrooms. Not only must the topping-up be cut, but some further saving made in first cost and in fuel. The Abbots Langley trials have revealed that which the Egerton Committee did not, and without the tests could not, know—the heat-conserving properties of the well-protected house allows for much simpler systems of distribution than they envisaged.

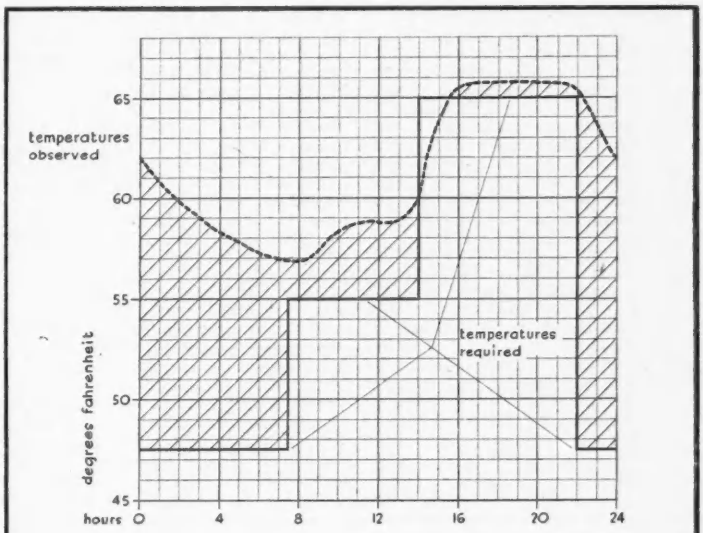
Because the heat finds its way around largely by convection, the ducts for background heating by convected warm air are unnecessary and indeed their contribution to the background heating is not worth the cost. You may remember the story of the farmer who cut a large hole in his barn door for the cat and a smaller one for the kitten. The stairwell should suffice for background warmth. But convected warm air is mercurial and follows the ways of the wind. Even when windows seemingly fit tightly, during strong winds it seldom finds its way to the windward side of a house. A radiator has this advantage over a warm air duct, that it will put heat, ultimately in the form of warm air, in the room required. On these grounds alone, as a distributing medium hot water is much to be preferred. It frees one, too, from the gloomy prophecies of fire experts and vermin specialists concerning warm air ducts. Since the solid fuel appliance is equipped with a back boiler, it is obvious that this can be used to supply some radiators. But were the proposal to heat the whole of the house to 30° F. above outside, the firebox would have to be so increased in size that it would become uneconomical. Many makes of appliances with back boiler allow some 45 square feet of radiator surface to be taken off without endangering the hot water supply; this requires the use of an indirect cylinder, the radiators being fed from the return of the primary circuit. The architect's problem is to dispose this radiator surface strategically in lieu of the ducts and topping-up apparatus proposed by the Egerton Committee.

If the solid fuel heating appliance serves the living room and, following usual practice, if cooking smells are not to permeate the house, the kitchen be cut off, then the kitchen should get first priority. Even in a well-insulated house, a gas or electric cooker will not keep the kitchen up to the 60° F. that seems to me essential for the housewife's main working space. The

dining space may need some assistance, depending upon how it is partitioned off from the rest of the ground floor and where located.

As to the bedrooms, if there is still heat to spare, I suggest giving the remaining radiator surface to one of the larger ones. The possibility of continuous heating to around 65° F. in a bedroom, particularly with so safe a device as a radiator, is very necessary in family life. The room is then one where an infant can play and a child be left without fear that when boredom sets in elementary experiments in the behaviour of fire may ensue. If there is a second large bedroom, it may well be equipped with a gas fire. The preference for gas rather than electricity is on the assumption that usually the heat is cheaper per therm and is achieved at an advantage in coal economy. The fire hazard of radiant heaters leads me to plead for convection heaters.

My former colleague, Dr. Weston, has computed for us the costs of variations of such systems run with and without overnight burning. These are set out in Fig. 9, and include for a solid fuel cooker in rural areas. The costs run between £23 and £29 a year (8s. 9d. to 11s. 3d. a week) for space and water heating and cooking, which give a reasonable grouping around the national average of £27 a year. The mean house temperatures are around 55° F. to 59° F. and are quite as good as many of the more extravagant two-stage houses in the Abbots Langley trials. The winter input therms for space and water heating vary from 800 to 1100. These estimates apply whether you use convected warm air or radiators, openable stoves or improved open fires, and allow for gas or electric summer water heating. Comparative capital costs I have not got, but they will all lie obviously between the "partial" systems in the Abbots Langley experiments and the "two-stage" and an allowance of an extra pound or two a year should meet the amortisation of extra capital cost above the cheapest house in these trials. The system is capable of some flexibility to suit various tastes and pockets and should not impose hardship. It should be noted that the difference between the three systems using radiant solid fuel appliances is largely a matter of the degree of space heating supplied and one that lies between that offered by the "partial" systems and the "two-stage" systems discussed last year.




TEMPERATURES IN A LIVING ROOM IN EXCESS OF THOSE REQUIRED.

Seasonal average of hourly temperatures with central heating thermostatically controlled.

**Fig. 10.**

COMPARISON OF ESTIMATED FUEL CONSUMPTION AND COSTS FOR WATER HEATING, SPACE HEATING AND COOKING IN HOUSES OF APPROXIMATELY 900 SQUARE FEET IN FLOOR AREA

| SYSTEM | Mean House Temperature (heating season only) | Winter Input therms. Space and water heating cooking | COSTS—pounds a year | | |
|---|---|---|---|---|---|
| | | | WINTER | SUMMER water heating and cooking only | TOTAL for year |
| OPEN FIRE OR STOVE with back boiler and radiators or convection. No overnight burning. Only downstairs heated ... | 55°F. | 800 | £16 | £7 | £23 |
| CLOSEABLE OPEN FIRE or OPENABLE STOVE with back boiler and radiators or convection. Overnight burning. Only downstairs heated ... ... ... ... | 57°F. | 950 | £19 | £7 | £26 |
| As above, but upstairs and downstairs heated, and overnight burning ... ... ... ... | 59°F. | 1,100 | £22 | £7 | £29 |
| FULL CENTRAL HEATING (coke burning) ... ... ... | 61°F. | 1,250 | £25 | £7 | £32 |
| SOLID-FUEL COOKER back-to-back type with back boiler and convection to one bedroom. Gas alternative cooking when back-to-back not alight ... ... | 56°F. | 1,100 | £20 | £7 | £27 |
| NATIONAL AVERAGE EXPENDITURE | — | — | — | — | £27 |

**Fig. 9.**

**The "Open" Plan.**

The comparison with full central heating is given because this method remains an economic possibility provided that one dispenses with the open fire. The reasons for this are partly the cost of burning extra fuel, partly the cost of providing another flue, and partly the constant loss of warmed air up the flue, which can only be reduced by inserting a damper to be closed when the fire is not alight.

The provision of these systems in houses that are thermally well protected leaves freedom in planning, certainly more than many of the more complex proposals of the Egerton Committee, and is less restrictive than the old pre-war system with three or four or more solid fuel flues with the worry of positioning the hearths in relation to doors and windows, but the question is often asked: do they permit of the Open Plan? By the Open Plan I take it we mean a house on the ground floor of which only the kitchen is partitioned off. My answer is that such systems are not suitable for the Open Plan and that the stairs must be cut off from the main room, otherwise too much heat will go upstairs. The front door must also be partitioned off. But the dining space may be incorporated with either kitchen or living room, as the designer sees fit.

If it is desired to use the Open Plan, then other systems of heating are essential, such as radiators, panel heating, skirting board heating or forced warm air. It is only essential to use the Open Plan when forced warm air is blown from one point and the whole house is to be fully heated most of the time. But with the Open Plan, heated by any system, care must be taken at the stairwell to ensure that too much warmed air is not going aloft and that cold draughts are not coming down and causing annoyance in the main sitting areas.

There is, however, a far more important aspect to which I would turn your atten-

tion, and that is the wastefulness of nearly all our present methods of heating, which can never be really economical so long as buildings and the spaces within them are standing for periods heated but unoccupied because when no one is present to enjoy the warmth the room might as well be lowered to the temperature required to prevent condensation. This point has been made by many persons before the author, but the results from Abbots Langley can be used to demonstrate it. Fig. 10 is one used last year[11] to show the average hourly temperatures for each hour of the day over the whole heating season as against the routine required in the living rooms of the houses. The space between the two has been hatched to indicate the temperatures above that required by the routine, which may be regarded as an index of heat wasted and fuel burnt to no purpose. If the structure had cooled off quickly and equally quickly come back to the temperatures required, our mean hourly temperatures would have followed the line of the experimental routine. Could we but achieve this high degree of flexibility it is apparent that by reducing the room temperature when no one was there we could lower the mean house temperature. This would lead to a saving in fuel. It must be remembered that it is not enough merely to have a heating device that switches off and on as required because there is a lot to be heated up initially—the air in the house or room and the structure of the house or room. Indeed, it would be really economic to have the heat required induced in the surrounding surfaces by the passage of a human being through the building. Technically, I am told, this is possible, but at great cost and with one preponderant snag. High-frequency low-temperature radiation could be induced in surfaces in this manner without any ill-effects to man, but if he had any metal on his person such as pennies in his pocket or his watch these would quickly become warmed almost to combustion point. So it seems that this form of heating cannot be considered until the Plastic Age, when the Mint replaces cupro nickel with polyvinylchloride. At present it is thought that the key to this problem lies in the thermal capacity of the structure. If we can build structures of sufficiently light thermal capacity to vary quickly according to our needs, then we may hope to save this unused heat indicated by the mean winter temperatures.

This is a subject in which calculation is so complex as to be of little assistance. The Building Research Station are undertaking full-scale trials to prepare for us the figures. I think I am right in saying that they are now pushing out into the unknown and certainly on a course which the previous trials suggest will be hopeful. The houses in the trials are chosen from among the alternative methods of house construction (the "permanent prefabs") that have been with us for some years now. They are selected mainly for the variations that the structures offer in thermal capacity—from a heavy no-fines concrete structure to a light steel frame with panel infilling. The trials now in progress have given the norm for "traditional" structures.

The effect of these trials on our whole




Fig. 11.

outlook could be tremendous. For instance, the materials used for factory fabrication of large units are nearly all of light thermal capacity. It may be unwise to start speculating yet, but one cannot help wondering whether the possible saving in fuel may not be sufficient to swing the case for prefabrication over beyond argument. Further this is not merely a matter of heating houses but an issue for all types of building. Already the demand for better heating means that not only houses, but factories, offices and schools are standing uninhabited for long periods, at temperatures well above that required to prevent condensation. The temperatures in these structures represent heat that has come from some source. And as noted earlier, in this country nearly all our space heating comes from coal. Can we save a significant amount, enough to require the use of materials of light thermal capacity? If so, we may look forward to quite a change in building techniques. But at present the B.R.S. is only at the beginning of building these houses and figures and facts but remote.

**Other Sources of Heat.**

An alternative would be to find another indigenous fuel or source of heat. Atomic physicists have been so cold about the future of atomic power that one is almost persuaded to believe them, and overcome one's wishful thinking. Let us set them aside and turn to the possibility of increasing the useful heat we obtain from the sun. The Americans, rich in fuel resources of all types, are experimenting the possibilities of solar heating; again they are wealthier than we are even in sunshine. In Fig. 11 is seen the solar house built by the Massachusetts Institute of Technology at Boston (U.S.A.).[12] The large cold frame on the top of the house absorbs the sun's radiant heat through the glass and heats the water in the coils; this heated water is stored in tanks until the heat is required. Well, we have far fewer days of sunshine here than in Massachusetts. There seems little hope of carrying the whole heat load by such devices, but my curiosity leads me to ask for a trial that will settle the amount of heat we might expect to obtain in such a way. It might be a boon if we could obtain our hot water in summer from this source.

However, this is not the only way of recovering to ourselves the sun's heat. Even in these misty isles, it finds its way through to the earth and the air and water from which it is recoverable by the heat pump or the reverse refrigeration cycle. The comments of American investigators are that the heat pump is not economical unless it is expected to provide refrigeration for one-third of its time in summer—and refrigeration in summer is seldom needed in Britain. None the less T. G. N. Haldane, past-President of the Institution of Electrical Engineers, has the credit, as far as I know, of being the first man to heat a house with the heat pump, which he did in Scotland, and I suggest that the time is ripe for a full-scale attack on this source of energy for house heating.

**A Summary.**

I can appreciate, however, that what architects really require is a summary for use in the draughting room. Here, then, in brief, are ten conclusions I draw.

(1) The house must be insulated to U values of 0.20 to 0.25 for walls. This can be done economically by using unventilated cavity walls with brick outer leaf and inner leaf of either foamed slag, clinker concrete or hollow clay block; these are plastered direct. For ground floors solid concrete rafts finished preferably in timber block or with asphalt tile or bitumastic. Pitched roofs should be insulated with glass silk or mineral wool laid in or between the ceiling joists.

(2) Windows and doors must fit snugly; this means using good quality fittings and ensuring accurate positioning of the hinges. External doors should be weather-stripped.

(3) No flue should be on an external wall.

(4) For space heating the objective should be a single solid fuel appliance with back boiler attached, and of sufficient size to take at least 30 sq. ft. of radiator surface as well as heating water for domestic use. The downstairs should receive prior service in space heating. Electric immersion or gas multipoint heaters or circulators are desirable.

(5) When convected warm air is used, this should be emitted on the ground floor and the feed for air to be heated taken from the hall. Under-floor ducts for combustion air are usually unnecessary.

(6) Cooking should be done by gas or electricity when available. In rural areas solid fuel cockers will be required and extra solid fuel space heaters may then be necessary.

(7) Hot water storage tanks should be lagged with 1 in. of insulation. When used in conjunction with gas circulator or electric immersion heater for summer use, 3 in. of insulation should be used and a removable cover provided.

(8) Any tanks or pipes in the roof space must be insulated; the ceiling insulation should be carried up over the tanks.

(9) Water pipes should be kept off external walls and the layout, particularly of hot pipes, kept compact. Flow and return pipes from boiler to hot tank should be insulated.

10. Air bricks to outside are bad practice in any rooms except larders. If some form of permanent ventilation is to be supplied to a room without a flue vent to the roof space with an opening of 30 sq. in. free area, the roof space must then be vented but normal air leakage around soffit and fascia of eaves can take care of this.

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# A.R.C.U.K.

## 71st Ordinary Meeting

THE 71st ordinary meeting of the Architects' Registration Council was held on December 9 at 66, Portland-place, W.1. Mr. Sydney Tatchell, C.B.E., F.R.I.B.A., was in the chair.

After confirmation of the minutes of the last meeting, THE CHAIRMAN said a notice of motion by Major Athoe had been received that morning at the offices of the Council, and read as follows:—"That the Council direct the Board of Architectural Education to exercise its duty by holding its own examinations for registration, in accordance with the provision contained in the ultimate paragraph of Section 5, Sub-section (2) of the Principal Act (1931)."

MR. ROMILLY B. CRAZE observed that as the motion was only received that morning he suggested consideration of the matter be adjourned until the next meeting of the Council.

MAJOR ATHOE: I should object to that inasmuch as it would be opposed to the rules of procedure which govern this Council.

THE CHAIRMAN: I agree with you, Major Athoe, that the motion is in order, but I would suggest to the Council that it is a matter of considerable moment, and I recommend that the matter be adjourned until our next meeting.

MAJOR ATHOE: It is stated in the Act that the Board shall hold its own examinations for registration. Is it the duty of the Board so to do?

THE REGISTRAR: The simplest approach to this is to read the particular Section of the Act—*i.e.*, Section 5 of the Architects' Registration Act, 1931: "It shall be the duty of the Board to recommend to the Council . . . the holding of any examinations in architecture which ought, in the opinion of the Board, to be passed by applicants for registration under this Act; and to hold examinations in architecture in accordance with this Act." My opinion is that the effect of that Section is to impose a duty upon the Board to hold an examination only when in their opinion such examination ought to be held and not otherwise.

On the proposal of MR. CRAZE, seconded by MR. S. W. MILBURN, it was agreed to deal with the matter at the next meeting of the Council.

In presenting the Report of the Admission Committee, MR. VINCENT BURR drew attention to one milestone in that the report recorded the balance still to be dealt with as "Nil." He did not wish the Council to go away with the impression that that would always be so; in fact, he felt the Committee would shortly be having a few cases under Regulation 26 (b).

MR. MARTIN S. BRIGGS presented the report of the Board of Architectural Education and reported that intimation had been received from the Registrar of the University of Liverpool that the University Council had agreed that the Ordinance and Regulations for the Certificate in Architectural Design and the Ordinance and Regulations for the Diploma in Architecture be withdrawn as from the end of the Session 1948/49, but that candidates now registered, and those already accepted who had been prevented from entering on the course for the Diploma by reason of National Service, be permitted to complete the course.

MR. A. C. BUNCH moved the adoption of the report of the Finance and General Purposes Committee, which stated that the voters' list for the election of representatives of the "unattached" architects

for the year 1950/51 had been prepared by the Registrar, in accordance with Regulation 44, and contained 2,722 names, entitling the "unattached" architects to six representatives on the Council.

With regard to the representation of constituent bodies on the Council the report gave the following figures of membership of the constituent bodies:—

| | *Number of Members.* | *Number of Representatives.* |
|---|---|---|
| Royal Institute of British Architects ... ... | 9,680 | 20 |
| Incorporated Association of Architects and Surveyors ... | 1,295 | 3 |
| Faculty of Architects and Surveyors ... ... ... | 390 | 1 |
| Architectural Association ... | 1,053 | 3 |
| Association of Building Technicians ... ... ... | 554 | 2 |
| Provincial Associations ... | 957 | 2 |

Submitting the report of the Professional Purposes Committee, MR. ROMILLY B. CRAZE reported that the Sub-Committee on the publication of plans had held three meetings and had prepared draft recommendations which they would like further time to consider. A report on this matter to the Council would therefore be deferred until March.

## OBITUARY

**A. B. H. Colls.**

The death took place on Christmas Eve (and was briefly reported in our last issue) of Mr. A. B. H. Colls, F.I.O.B., formerly of Trollope and Colls, Limited, who was President of the London Master Builders' Association in 1930, and had been a member of the Council since 1923.

Mr. Colls had a long record of loyal service to the building industry. He was President of the Builders' Benevolent Institution from 1940-1944 and of the Builders' Clerks' Benevolent Institution in 1928. At the date of his death he had been Honorary Treasurer of the Builders' Benevolent Institution, and a Trustee of the London Master Builders' Association, the Builders' Benevolent Institution and the Builders' Clerks' Benevolent Institution for many years. He was also a liveryman of the Fishmongers' Company and a Freeman of the City of London.

One who knew him writes: "Archie Colls' death removes from the building industry a man whose kindliness and fair-mindedness have made as great a contribution to the progress of the industry as has his firm to the London building scene, Quiet, genial and yet decisive, he took all his life the keenest of practical interest in the welfare side of the building trade. We are poorer without him."

The funeral took place at Liphook, and a memorial service was held at St. Paul's, Knightsbridge, on December 30.

**Arthur H. Hasnip, L.R.I.B.A.**

We announce with regret the death on December 13 of Mr. Arthur Hugh Hasnip, L.R.I.B.A., who was a partner in the firm of Arthur W. Cooksey and Partners.

While most of his work was carried out jointly with his two colleagues, Messrs. R. A. Cooksey, F.R.I.B.A., and G. M. Kingsford, M.A., F.R.I.B.A., he was chiefly responsible for an office block and the replanning of the Borough market at Southwark, an extension to Messrs. Peek Frean's factory, Bermondsey, a furniture repository and offices, Brixton, and St. Saviour's Almshouses, West Norwood.

Mr. Hasnip was surveyor to the wardens of St. Saviour's Cathedral, Southwark, and was a member of the Southern Counties Consultative Committee of Architects and Builders.

## CORRESPONDENCE

### Building Bulletin No. 1

TO THE EDITOR OF *The Builder*.

SIR,—The above publication by the Ministry of Education is both attractively presented and plausible, and may well become a "bible" to those whose job it is to build new schools. It is a most interesting and valuable guide, both to architects and educationists, and most of it just the type of information which has been required for some time. It does, however, contain very controversial assertions which the Ministry may have cause to regret in the course of time.

Firstly, it accepts without question the modern conception of education—a conception which has been (and is being) criticised in the Press, and which, in my own limited experience, I have found to be ridiculed by many practising school teachers. It has been suggested to me that the schools of the future are being designed as play-palaces for rowdy little "know-alls"!

This may sound irreverent and irrelevant, but I am sure that most education authorities are convinced that six square classrooms in a row are no less efficient for teaching than three groups of two irregularly shaped classrooms! And when I know beyond doubt that the former cost less than the latter (using the same standard of construction) then I think Building Bulletin No. 1 and Circular 209 are irreconcilable.

But this is not the only controversial point, and one of more concern to architects is to the effect that the new plan types must be linked with a prefabricated system of construction. But many local authority architects have to deal with the subsequent maintenance of their buildings, and they are finding that excessive maintenance bills are not uncommon with many types of "prefab" construction. All such systems are not to be condemned on that account, of course, and any authority which is willing (or rash!) enough to experiment should certainly be encouraged. But I do suggest that the Ministry of Education should give its controversial theories a longer period of trial before "plugging" them so wholeheartedly to the rest of the country.

The conclusions seem to be:

(a) High praise is due for the Ministry's good intentions (which are appreciated) and for their excellent guidance on numerous details.

(b) It has yet to be proved that either the new educational methods or the new type of school plans are going to produce more intelligent or better citizens; at present it seems likely that children from the so-called "progressive" authorities will be just as dull as the children from elsewhere.

(c) Cost per place is a most deceptive factor where the methods of construction now called "semi-permanent" are used, for they are likely to cause expensive maintenance and renewal costs over a 60-year period.

(d) It would seem desirable for the Ministry to continue to allow at least the same degree of freedom which they have previously allowed when dealing with widely different types of plans submitted to them by widely different types of authorities.

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## HOUSING PROGRESS

### Figures for November

THE latest Housing Progress Summary shows that the number of permanent houses completed in Great Britain during November was 16,492, compared with 16,433 in October.

This brings the number of permanent houses completed during the year to date to 180,191, made up as follows:—January, 15,897; February, 16,655; March, 20,160; April, 15,110; May, 16,866; June, 16,489; July, 14,634; August, 14,556; September, 16,899; October, 16,433; November, 16,492.

The total number of houses completed under the post-war programme is now 763,057 (605,911 permanent, and 157,146 temporary).

During November, homes were provided by new building, repair of uninhabitable houses, conversion and requisitioning for 17,509 families, compared with 17,610 in October. This brings the total number of families rehoused by these methods under the post-war programme to 1,060,048. Excluding requisitioned houses, the number of additional homes provided is 1,032,159.

### N.F.B.T.E. ANNUAL DINNER

THE annual dinner and dance of the National Federation of Building Trades Employers is to take place on January 25, at the Dorchester Hotel, London, W.1. Tickets for the function are still available to members of the Federation but prompt application is now advised.

The president of the N.F.B.T.E., Mr. Norman Longley, M.I.O.B., will be in the chair and will propose the toast of His Majesty's Government, which will be responded to by Ald. the Rt. Hon. Charles Key, the Minister of Works.

The senior vice-president, Mr. Robert O. Lloyd, O.B.E., of Liverpool, will propose the toast of the guests and Mr. Michael Waterhouse, M.C., president of the Royal Institute of British Architects, and Mr. Frank Owen, Editor-in-Chief of the *Daily Mail*, will reply for the guests. The B.B.C. commentator, Mr. Wynford Vaughan Thomas, will introduce the cabaret which will include Mr. Jack Train and Miss Lizbeth Webb.

# RATES OF WAGES IN THE BUILDING TRADE [ AS FROM OCT. 3, 1949 ]

**(Every endeavour is made to ensure accuracy, but we cannot be responsible for errors)**

## KEY TO SCHEDULE OF GRADE RATES.

| Grade Classification, | A | A1 | A2 | A3 |
|---|---|---|---|---|
| Craftsmen ... ... | 2/10 | 2/9½ | 2/9 | 2/8½ |
| Labourers ... ... | 2/3¾ | 2/3½ | 2/3 | 2/2½ |

| Town. | Grade. |
|---|---|
| Aberavon | A |
| Aberdare | A |
| Abergavenny | A |
| Abingdon | A2 |
| Accrington | A |
| Addlestone | A |
| Aldeburgh | A3 |
| Aldershot District | A2 |
| Alfreton U.D. | A |
| Alnwick | A1 |
| Altrincham | A |
| Amble | A1 |
| Amersham | A1 |
| Ammanford | A |
| Andover | A2 |
| Ardingly | A2 |
| Arundel | A2 |
| Ascot | A2 |
| Ashby-de-la-Zouch U.D. | A |
| Ashby Woulds U.D. | A |
| Ashford (Kent) | A2 |
| Ashford (Middlesex) | A |
| Ashington | A |
| Ashtead | A |
| Ashton-under-Lyne | A |
| Aspatria and Brayton | A2 |
| Atherstone (parts of) | A1 |
| Aylesbury | A2 |
| Aylesby (Yorks) | A |
| Aylesham | A3 |
| Bagshot | A2 |
| Bakewell U.D. | A2 |
| Banbury | A2 |
| Barnard Castle U.D. | A1 |
| Barnoldswick U.D. | A1 |
| Barnsley | A |
| Barrow-in-Furness | A |
| Barrow-upon-Soar R.D. (exc. Thrussington A2) | A |
| Barry | A |
| Basford R.D. (exc. Willoughby-on-the-Wolds A2) | A |
| Basingstoke | A2 |
| Bath | A |
| Batley | A |
| Baxterley | A1 |
| Beaconsfield & District | A1 |
| Beamish | A |
| Bearl | A |
| Bearpark | A |
| Beccles | A2 |
| Bedale R.D. | A |
| Bedford | A |
| Bedlington | A |
| Bedwas | A |
| Beeston & Stapleford U.D. | A |
| Belper U.D. | A |
| Belton | A |
| Berkhamsted | A |
| Berrington | A1 |
| Berwick District | A1 |
| Beverley | A |
| Bexhill-on-Sea | A2 |
| Biggleswade | A2 |
| Billericay | A1 |
| Billing | A |
| Billingham U.D. | A |
| Bilsthorpe | A |
| Birchington | A2 |
| Birkenhead | * |
| Birmingham C.B. | †A |
| Bishop Auckland | A |
| Bishop's Stortford | A |
| Bispham | A |
| Blackburn | A |
| Blackpool | A |
| Blackwell R.D. | A |
| Blaydon U. D. | A |
| Blidworth | A |
| Blyth | A |
| Bognor Regis | A2 |
| Boldon U.D. | A |
| Bolsover U.D. | A |
| Bolton | A |
| Bourne End | A1 |
| Bournemouth District | A1 |
| Bracknell | A2 |
| Bradford | A |
| Bradford-on-Avon | A2 |
| Braintree | A2 |
| Breconshire, County of | ‡A2 |
| Brent Knoll | A2 |
| Brentwood | A |
| Bridlington | A |
| Brierfield | A |
| Brighouse | A |
| Brighton | A1 |
| Bristol | A |
| Broadstairs | A2 |
| Bromsgrove U.D. | A |
| Brough | A |
| Broughton (Cheshire) | A |
| Buckley | A |
| Bungay | A3 |
| Burnham-on-Crouch | A3 |
| Burnley | A |
| Burton-on-Trent C.B. | A |
| Bury | A |
| Bury St. Edmunds | A3 |
| Buxton | A1 |
| Byfleet | A1 |
| Calder Valley | A |
| Cambridge | A |
| Cannock U.D. | A |
| Canterbury | A2 |
| Cardiff | A |
| Cardiganshire, County of | ‡A2 |
| Carlisle | A |
| Carmarthenshire, Cnty.of | ‡A2 |
| Carnarvonshire, Cnty of | ‡A3 |
| Carnforth | A |
| Castleford | A |
| Caterham | A |
| Chapel-en-le-Frith | A1 |
| Charmy Down | A |
| Chatham & District | A1 |
| Cheadle (Staffs) R.D. | A |
| Chelmsford | A |
| Cheltenham | A1 |
| Chepstow | A1 |
| Chertsey | A |
| Chester | A |
| Chesterfield M.B. | A |
| Chesterfield R.D. | A |
| Chester-le-Street U.D. | A |
| Chichester | A2 |
| Chippenham (inc. Chippenham Within and Hardenhuish) | A2 |
| Chorley | A |
| Clacton | A1 |
| Cleethorpes | A |
| Clevedon | A1 |
| Cleveleys | A |
| Clitheroe | A |
| Coalville U.D. | A |
| Cobham (Surrey) | A |
| Colchester | A |
| Colne | A |
| Colwyn Bay | A1 |
| Congleton | A1 |
| Consett | A |
| Conway | A1 |
| Cornwall, County of | ‡A2 |
| Coventry C.B. | A |
| Cranbrook | A2 |
| Cranleigh | A2 |
| Crawley (Sussex) | A2 |
| Crewe | A |
| Cromer | A1 |
| Crowborough | A2 |
| Cuckfield | A2 |
| Dalton-in-Furness | A |
| Darlington District | A |
| Darwen | A |
| Deal | A2 |
| Denbigh Town | A2 |
| Derby C.B. | A |
| Devizes | A2 |
| Devon, County of | ‡A2 |
| Dewsbury | A |
| Didcot | A2 |
| Diss | A3 |
| Doncaster C.B. | A |
| Dorking | A1 |
| Dorset, County of (excepting Poole and Wimborne A1) | A2 |
| Dover | A2 |
| Dovercourt | A1 |
| Driffield U.D. | A1 |
| Droitwich M.B. | A1 |
| Dudley M.B. | A |
| Dunstable | A |
| Durham City | A |
| Eastbourne | A1 |
| E. Glam. & Mon. Val. | A |
| East Grinstead District | A2 |
| Eastwood (Notts.) U.D. | A |
| Ebbw Vale & District | A |
| Edenbridge | A2 |
| Ely | A3 |
| Epping | A |
| Exeter | A1 |
| Fakenham | A3 |
| Falmouth | A2 |
| Fareham | A |
| Faversham | A2 |
| Felixstowe | A1 |
| Filey U.D. | A1 |
| Fleetwood | A |
| Flint | A |
| Folkestone | A2 |
| Frinton | A1 |
| Frome | A1 |
| Gainsborough R.D. (Mid. pt.) | A2 |
| Gateshead | A |
| Gillingham (Kent) | A1 |
| Glossop | A |
| Gloucester | A1 |
| Gloucestershire, Cnty. of | ‡A2 |
| Godalming | A2 |
| Goole M.B. | A |
| Gosport | A |
| Grantham M.B. | A1 |
| Gravesend | A |
| Great Yarmouth | A |
| Grimsby (Yorks.) | A |
| Grimsby R.D. (Lincs.) | A3 |
| Guildford District | A2 |
| Guilsborough | A1 |
| Guiseley | A |
| Halesowen M.B. | A |
| Halifax | A |
| Halstead | A2 |
| Haresfield | A1 |
| Harlow | A |
| Harpenden | A |
| Harrogate | A |
| Hartlepool | A |
| Harwich | A1 |
| Haslemere | A2 |
| Hastings | A2 |
| Hatfield (Herts.) | A |
| Haywards Heath | A2 |
| Hemel Hempstead | A |
| Henley-on-Thames | A2 |
| Hereford | A2 |
| Herefordshire, Cnty. of | ‡A2 |
| Herne Bay | A2 |
| Hertford | A |
| Hexham U.D. | A |
| Heysham | A |
| High Wycombe | A1 |
| Highworth | A2 |
| Hinckley U.D. | A |
| Hitchin | A |
| Hoddesdon | A |
| Horley | A2 |
| Horsham | A2 |
| Horwich | A |
| Huddersfield | A |
| Hull | A |
| Hunstanton | A2 |
| Huntingdon (Staffs) | A |
| Ilkley | A |
| Ingatestone | A1 |
| Ipswich | A |
| Isle of Sheppey | A2 |
| Isle of Thanet | A2 |
| Isle of Wight | A2 |
| Jarrow M.B. | A |
| Keighley | A |
| Kendal | A |
| Kenilworth U.D. | A |
| Kettering M.B. | A |
| Keynsham | A |
| Kidderminster M.B. | A |
| King's Lynn | A2 |
| Kingskerswell | A1 |
| Kingsteignton | A1 |
| Kirkham | A |
| Knaresborough U.D. | A |
| Knowle | A1 |
| Lancaster | A |
| Leamington M.B. | A |
| Leatherhead | A |
| Leeds | A |
| Leicester C.B. | A |
| Leighton Buzzard | A2 |
| Letchworth | A1 |
| Lewes | A2 |
| Lichfield M.B. | A1 |
| Lincoln C.B. | A |
| Littlehampton | A2 |
| Liverpool | * |
| Llandudno | A1 |
| Llanelly | A |
| London | * |
| Long Eaton | A |
| Loughborough M.B. | A |
| Louth M.B. | A2 |
| Lowestoft | A |
| Luton | A2 |
| Luton | A |
| Lyneham (Devon) | A1 |
| Macclesfield | A1 |
| Maidenhead | A1 |
| Maidstone | A1 |
| Maldby | A |
| Maldon (Essex) | A1 |
| Malvern U.D. | A2 |
| Manchester | A |
| Manningtree | A1 |
| Mansfield M.B. | A |
| March | A2 |
| Margate | A2 |
| Market Harborough | A1 |
| Maryport | A |
| Matlock U.D. | A1 |
| Melksham | A2 |
| Melton Constable | A3 |
| Melton Mowbray U.D. | A2 |
| Merthyr | A |
| Middlesbrough | A |
| Middleton | A |
| Middlewich | A |
| Milford Haven | A2 |
| Morecambe | A |
| Morley | A |
| Mundesley | A2 |
| Nantwich | A |
| Nelson | A |
| Newark-on-Trent R.D. | A1 |
| Newbury | A2 |
| Newcastle-on-Tyne | A |
| Newcastle-under-Lyme | A |
| New Forest District | A2 |
| Newmarket | A2 |
| Newport, Mon. | A |
| Newport Pagnell | A2 |
| Newton Abbot | A1 |
| Northallerton Dist. | A |
| Northampton C.B. | A |
| North Shields | A |
| Norton Radstock | A1 |
| Norwich | A |
| Nottingham C.B. | A |
| Nuneaton M.B. | A |
| Oakham U.D. | A2 |
| Oldham | A |
| Ongar | A |
| Ormskirk | A |
| Ossett and Horbury | A |
| Oxford | A |
| Oxted | A1 |
| Paignton | A1 |
| Peterborough | A |
| ,, Soke | A1 |
| Pickering | A3 |
| Plymouth | A |
| Pontefract | A |
| Pontypridd District | A |
| Portishead | A |
| Portland Stoneyards | A |
| Portsmouth | A |
| Port Talbot | A |
| Preston | A |
| Pudsey | A |
| Pulborough | A2 |
| Radnorshire, County of | ‡A2 |
| Ramsgate | A2 |
| Rayleigh | A1 |
| Reading | A |
| Redcar B. | A |
| Redditch U.D. | A |
| Redhill and Reigate | A |
| Ripon | A3 |
| Rochdale | A |
| Rochester | A1 |
| Rotherham | A |
| Rugby M.B. | A |
| Saffron Walden | A2 |
| St. Albans | A |
| St. Helens | A |
| St. Neots | A2 |
| Salisbury City | A2 |
| Salisbury Plain | A2 |
| Sawbridgeworth | A |
| Saxmundham | A3 |
| Scarborough | A |
| Scunthorpe | A |
| Selby | A |
| Sevenoaks | A1 |
| Sheerness | A2 |
| Sheffield | A |
| Shipley | A |
| Shoeburyness | A |
| Shoreham | A1 |
| Shrewsbury M.B. | A |
| Sittingbourne | A2 |
| Skegness U.D. | A1 |
| Skipton U.D. | A1 |
| Sleaford U.D. | A2 |
| Slough | A1 |
| Smethwick C.B. | †A |
| Snettisham | A2 |
| Somerset, County of | ‡A2 |
| Southampton | A |
| Southend-on-Sea Dist. | A |
| Southport | A |
| South Shields C.B. | A |
| Spalding U.D. | A2 |
| Stafford M.B. | A |
| Staines | A |
| Stamford M.B. | A1 |
| Stantonwick | A |
| Stevenage | A |
| Stockport | A |
| Stockton R.D. | A |
| Stockton-on-Tees | A |
| Stoke-on-Trent C.B. | A |
| Stoke Orchard | A1 |
| Stourbridge M.B. | A |
| Stourport U.D. | A |
| Stowmarket | A3 |
| Stratford-on-Avon M.B. | A1 |
| Sunderland District | A |
| Sunningdale | A |
| Sutton Coldfield M.B. | A |
| Swaffham | A3 |
| Swanage | A2 |
| Swansea | A |
| Swindon | A2 |
| Swinton U.D. | A |
| Tamworth M.B. | A |
| Tenterden | A2 |
| Tewkesbury | A1 |
| Thames Haven | A |
| Thetford | A3 |
| Thorpe Bay | A |
| Thurrock U.D.C. Area | A |
| ,, North of, to Billericay | A1 |
| Tilbury | A |
| Todmorden | A |
| Tonbridge | A1 |
| Torquay | A1 |
| Totnes | A1 |
| Trowbridge | A2 |
| Tunbridge Wells | A1 |
| Tynemouth C.B. | A |
| Uppingham (Salop) | A1 |
| Uttoxeter U.D. | A2 |
| Wakefield | A |
| Wallsend B. | A |
| Walsall C.B. | A |
| Walsden | A |
| Walton-on-Naze | A1 |
| Ware | A |
| Warminster | A2 |
| Warrington | A |
| Warwick M.B. | A |
| Wellington R.D. | A1 |
| Wells (Norfolk) | A3 |
| Welwyn | A |
| Welwyn Gar. City | A |
| West Bromwich C.B. | A |
| Westbury | A2 |
| Westcliff-on-Sea | A |
| Westerham | A1 |
| Weston-super-Mare | A1 |
| Weybridge | A |
| Weymouth | A2 |
| Whitby U.D. | A1 |
| Whitstable and District | A2 |
| Wickford | A1 |
| Widnes | A |
| Wigan | A |
| Wigton | A3 |
| Willington | A |
| Wilmslow | A |
| Wilts. County of | ‡A2 |
| Winchester | A2 |
| Windermere | A3 |
| Windsor and Eton | A1 |
| Wisbech | A2 |
| Witham | A1 |
| Woking (District) | A1 |
| Wokingham | A2 |
| Wolverhampton C.B. | A |
| Woodbridge | A3 |
| Worcester C.B. | A |
| Workington | A |
| Worksop M.B. | A |
| Worthing | A2 |
| Wrexham (incl. Cefn) | A |
| Wroughton | A2 |
| Wylam | A |
| Wymondham | A3 |
| York | A |

* For Birkenhead, Liverpool, and London the rates are :—Craftsmen, 2s. 11¼d.; Labourers, 2s. 5d. In the case of London the rate beyond the 12-mile radius is :—Craftsmen, 2s. 11d.; Labourers, 2s. 4¾d.

† Plus 2d. per working day.

‡ This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters, Joiners and Plumbers in all towns and districts receive 2d. per day Tool Allowances.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 2/- per hour. Women introduced to carry out work other than craft processes, 1s. 8d. per hour.

For Building Trade Wages in Scotland, see page 28.

# PRICES CURRENT OF MATERIALS*

**NOTE.—These prices apply to large quantities of materials at works at London stations, or site, in London area as stated. Prices for smaller quantities ex merchant's warehouse will of course be higher. Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. The prices of softwoods are for cash on delivery.**

## BRICKS, etc.

| | £ s. d. |
|---|---|
| First Hard Stocks ... ... ... ... | 9 5 0 |
| Second Hard Stocks ... ... ... | 8 15 0 |
| Mild Stocks ... ... ... ... | 7 10 0 |

All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.

| 2½-in. Nominal Phorpres Bricks. | At Maiden Lane Stn., per 1,000 s. d. | To Sites in West Central District per 1,000 s. d. |
|---|---|---|
| Commons ... ... | 73 0 | 85 0 |
| Cellular ... ... ... | 67 11 | 85 0 |
| Keyed ... ... ... | 75 0 | 87 0 |
| Cellular Keyed ... | 69 11 | 87 0 |
| Rustics ... ... ... | 93 0 | 105 0 |
| Cellular Rustics ... | 87 11 | 102 11 |
| Single Bullnose ... ... | 93 0 | 105 0 |
| Sandfaced ... ... | 103 0 | 115 0 |
| Cortex Facing Brick ... | 88 0 | 100 0 |

* At King's Cross Stn. † ex King's Cross Stn.

| | £ s. d. |
|---|---|
| Best blue Pressed Staffs. (London Stns.) ... | 18 16 0 |
| Do. Bullnose (London Stns.) ... ... | 20 2 0 |
| Blue Wire Cuts (London Stns.) ... ... | 16 14 6 |
| Midhurst Lime Bricks (Del. London Sites) | 8 5 0 |
| Uxbridge Whites (Del. London Sites) ... | 6 4 6 |

Best Stourbridge Fire Brick (London Stns.) :—

| £ s. d. | £ s. d. |
|---|---|
| 2½ in. ... 16 18 6 | 3 in. ... 19 16 0 |

GLAZED BRICKS (London Stns.). The prices given below are now subject to a percentage addition of 27½ for Best, and 22½ for Second quality.

| | | | |
|---|---|---|---|
| Best White Ivory and Salt Glazed | 40 0 0 | D'ble Stretchers ... D'ble Headers ... | 53 10 0 48 10 0 |
| Stretcher | | One side & two ends | 54 10 0 |
| Headers | 39 10 0 | Two sides & one end | 56 0 0 |
| Quoins, Bullnose & 4½ in. Flats | | Splays and Squints | 52 0 0 |
| | 50 0 0 | | |

Second Quality, £2 0s. per 1,000 less than best. Cream and buff, £2 0s. extra over white. Other colours Hard Glaze, £5 10s. 0d. extra over white.

Haulage to site 20s. 1,000.

## PARTITION SLABS.

Delivered Central London Area.

HOLLOW CLAY PARTITION BLOCKS.

London Brick Company.

| Minimum Lorry Loads. Keyed. | s. d. |
|---|---|
| 2" per yd. sup. 120 yds. ..... | 3 1 |
| 2½" " " 100 " ..... | 3 4 |
| 3" " " 100 " ..... | 4 0 |
| 4" " " 84 " ..... | 4 7 |

Half blocks *add* 2s. per yard super to above prices.

CLINKER CONCRETE.

| | | | |
|---|---|---|---|
| 2" per yd. sup. ... | 2 7 | 3" per yd. sup. | 3 6 |
| 2½" " " | 3 1 | 4" " " | 4 6 |

CRANHAM TERRA COTTA.

| | |
|---|---|
| Size 12 x 9 x 2" per yd. super ..... | 3 1 |
| Size 12 x 9 x 2½" " " ..... | 3 4 |
| Size 12 x 9 x 3" " " ..... | 4 0 |
| Size 12 x 9 x 4" " " ..... | 4 7 |

HEMPSTEAD—KEYED TWO SIDES.

| | | | |
|---|---|---|---|
| 12 x 9 x 2" ..... | 3 1 | 12 x 9 x 3" ... | 4 0 |
| 12 x 9 x 2½" ..... | 3 4 | 12 x 9 x 4" ... | 4 7 |

Per yard super d/d. Free on site, London.

Plus 2d. for smooth one side, and 4d. for smooth both sides.

## STONE.

| | s. d. |
|---|---|
| BATH STONE— | |
| Monks Park ..... | 5 4 |
| St. Aldhelm Box Ground ..... | 6 4 |
| Delivered in railway trucks at South Lambeth, G.W.R., per ft. cube. | |
| PORTLAND STONE— | |
| Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly. .....per ft. cube | 6 1½ |
| NOTE.—1d. per ft. cube extra for every ft. over 20 ft. *average* and ½d. beyond 30 ft. | |
| HOPTON-WOOD STONE— | |
| F.O.R. Quarries, Wirksworth, Derbyshire. Random blocks up to 3 ft. 3 in. long and not over 10 cu. ft. .....per ft. cube | 22 6 |
| Slabs—Random sizes sawn 2 sides, up to 5 ft. long and not over 15 ft. super, ¾ in. per ft. super ..... | 4 7 |
| YORK STONE, BLUE—*Robin Hood Quality.* Delivered at any Goods Station, London. | |
| 6 in. sawn two sides landings to sizes (under 30 ft. super) .....per ft. super | 9 4 |
| 6 in. rubbed two sides, ditto " " | 10 10 |
| 3 in. sawn two sides slabs (random sizes) ..... " " | 4 5 |
| 2 in. to 2½ in. sawn one side slabs (random sizes) (paving) " " | 2 4 |
| 1½ in. to 2 in. ditto ..... " " | 2 1½ |
| HARD YORK— | |
| Delivered at any Goods Station, London | |
| Scrappled random blocks per ft. cube | 13 4 |
| 6 in. sawn two sides landings to sizes (under 40 ft. super) .....per ft. super | 10 0 |
| 6 in. rubbed two sides, ditto " " | 11 10 |
| 4 in. sawn two sides slabs (random sizes) ..... " " | 6 5 |
| 3 in. ditto ditto ..... " " | 4 10 |
| 2 in. self-faced random flags per yd. super | 19 9 |

## CEMENT.

| | £ s. d. |
|---|---|
| Best British Portland Cement. Standard Specification delivered Charing Cross area. | |
| 6-ton loads and upwards site.....per ton | 3 2 6 |
| 1- to 6-tons site..... | 3 7 6 |
| In non-returnable paper bags charged at 8/– net per ton or 6d. each net per sack in lots of less than 1 ton. | |
| In non-returnable jute sacks charged at 8/- per ton. | |
| In returnable jute sacks charged at the rate of 35/6 net per ton of cement of 1/9½ net per sack in lots of less than 1 ton. Credit on return at 1/6 net per sack, | |
| "Ferrocrete" Rapid Hardening Cement at 6-ton loads and upwards site..... | 3 8 6 |
| 1- to 6-tons site..... | 3 13 6 |
| In paper bags 8/– per ton extra. | |
| "Aquacrete" Water Repellent cement, 31/6 per ton on ordinary "Blue Circle" prices. In paper bags, 8/– per ton extra. | |
| Red, Buff or Khaki "Colorcrete" in 6-ton lots ..... | 5 4 0 |
| In paper bags 8/– per ton extra. | |
| Other colours, according to colour. In 4-ton lots from 172/– to 396/– per ton (including paper bags). | |
| "Snowcrete" White Portland Cement (In free paper bags)..... | 11 13 0 |
| Under one ton..... per cwt. | 0 14 0 |
| "417" Cement (Ultra Rapid Hardening) Delivered Site London Area in 6-ton lots and upwards..... | 4 5 0 |
| In paper bags 8/– per ton extra. | |
| Super Cement (Waterproof) in London Area 31/6 per ton above Portland Cement, plus bags. | |
| Cullamix Tyrolean Finish...£7 14s. 6d. to (1-ton lots and upwards, including cost of paper bags). | 9 8 0 |

| £ s. d. | £ s. d. |
|---|---|
| Parian Cement 8 6 9 | Keen's Cement, White 8 6 9 |
| | Pink 8 1 9 |

## PLASTER.

| £ s. d. | £ s. d. |
|---|---|
| Coarse, Pink 5 11 9 | Sirapite, Coarse 5 15 6 |
| " White 5 19 9 | " Finish 6 3 6 |

Above prices for 1-ton loads and over London Area.

| | |
|---|---|
| Blue Lias Lime, inc. bags 6-ton lots..... 5 17 6 | Hydrated Lime, 6-ton lots ..... 4 1 6 |
| Granite Chips, 6-ton lots ... 2 3 0 | Lump, Lime, 6-ton lots ..... 3 15 3 |
| | Hair, per cwt.... 4 4 6 |

Stourbridge Fireclay in paper bags £4 2s. 0d., 6-ton lots at railway depot.

INSIST
ON
WOOD BLOCK
FLOORING
WHICH IS
NOW IN
ABUNDANCE
THERE IS NO LONGER
NEED FOR
EXPENSIVE SUBSTITUTES
VIGERS BROS.
LTD.
BROADWAY CHAMBERS
LUDGATE BROADWAY
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CITY 2111/4

## PLASTER AND WALL BOARDS.

Plaster (Gypsum) Boards ⅜ in. thick, 600 yds. and over in one delivery 1/8 sq. yard.

Wall Boards—3 and 4' wide, 6 to 12', ⅜" thick. 600 yds. and over in one delivery, 1/11 sq. yd. Carriage paid to site.

## SAND.

D/D site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

| | | s. d. |
|---|---|---|
| Thames Ballast ..... | per yd. | 15 9 |
| Pit Ballast..... | " | 15 10 |
| Pit Sand ..... | " | 15 2 |
| Washed Sand ..... | " | 17 0 |
| ¾ in. shingle ..... | " | 15 2 |
| ¾ in. Broken Brick ..... | " | 17 6 |
| Pan Breeze ..... | " | 10 4 |

## TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons..... Per 1,000 f.o.r. London

| Best machine-made tiles from Broseley or Staffordshire districts..... | £ s. d. 9 14 6 |
|---|---|
| Ditto, hand-made, ditto..... | 11 11 0 |
| Ornamental ditto ..... | 12 4 0 |
| Hip and valley tiles—Hand-made ..... (per dozen) —Machine-made ..... | 0 19 5 0 18 4 |

NOTE.—Breakage in transit, purchasers' responsibility.

## SLATES.

First-quality slates from Penrhyn or Portamadoc carriage paid in full truck loads to London Rate Station.

| Per 1,000 actual | £ s. d. | | £ s. d. |
|---|---|---|---|
| 24 by 12 ..... | 69 18 0 | 18 by 10 ..... | 35 10 6 |
| 22 by 12 ..... | 61 4 4 | 18 by 9 ..... | 32 5 6 |
| 22 by 11 ..... | 55 0 6 | 16 by 10 ..... | 31 13 3 |
| 20 by 12 ..... | 50 7 0 | 16 by 8 ..... | 24 13 9 |
| 20 by 10 ..... | 46 6 3 | | |

NOTE: Breakage in transit, purchasers' responsibility.

## PLUMBERS' BRASS WORK.

Delivered in London

M.O.H.

S.D. BIB COCKS CRUTCH HEAD, FOR 1 TON.

½ in. 66/– ¾ in. 108/– per doz.

TOILET BIB COCKS FOR IRON.

½ in. 114/– ¾ in. 171/– per doz.

S.D. STOP COCKS FOR IRON.

| ½ in. | ¾ in. | 1 in. | 1½ in. | 1½ in. | 2 in. |
|---|---|---|---|---|---|
| 72/– | 111/– | 189/– | 312/– | 468/– | 840/– per doz. |

S.D.S. COCKS WITH TWO UNIONS FOR LEAD.

| ½ in. | ¾ in. | 1 in. | 1½ in. | 1½ in. | 2 in. |
|---|---|---|---|---|---|
| 102/– | 150/– | 312/– | 408/– | 642/– | 1056/– per doz. |

DOUBLE NUT BOILER SCREWS.

| ½ in. | ¾ in. | 1 in. | 1½ in. | 1½ in. | 2 in. |
|---|---|---|---|---|---|
| 17/– | 20/– | 36/– | 68/– | 108/– | 140/– per doz. |

HEAVY CROYDON BALL VALVES.

| ½ in. | ¾ in. | 1 in. | 1½ in. | 1½ in. |
|---|---|---|---|---|
| 97/– | 150/– | 263/– | 394/– | 570/– per doz. |

CAPS AND SCREWS.

| 1½ in. | 1½ in. | 2 in. | 3 in. | 3½ in. | 4 in. |
|---|---|---|---|---|---|
| 23/6 | 33/– | 41/– | 79/– | 107/– | 139/– per doz. |

BRASS SLEEVES.

| 1½ in. | 2 in. | 3 in. | 3½ in. | 4 in. |
|---|---|---|---|---|
| 29/– | 36/– | 67/– | 77/– | 101/– per doz. |

LEAD TRAPS WITH BRASS CLEANING SCREWS

| | 1½ x 6 lb. | 1½ x 6 lb. | 2 x 7 lb. | 3 x 7 lb. |
|---|---|---|---|---|
| Lead P. | 71/– | 89/– | 143/– | 219/– per doz. |
| Lead S. | 87/– | 108/– | 176/– | 291/– per doz. |

SOLDER.—Plumbers' 3/7, Tinmen's 4/4, Blow pipe 4/5 per lb.

Copper Tubes .....1/5½ per lb. Basis.

Brass Tubes .....1/3½ per lb. Basis.

Basis prices are subject to extras.

## GLUE.

| | | £ s. d. |
|---|---|---|
| Best Scotch Glue..... | per ½ cwt. | 4 9 9 |
| Croid Glue ..... | per lb. | 9 |

## VARNISHES, etc.

| | | Per gallon. |
|---|---|---|
| Oak Varnish ..... | Outside | 1 6 0 |
| Fine do. ..... | " | 1 16 0 |
| Fine Copal..... | " | 1 15 0 |
| Pale Copal..... | " | 1 12 8 |
| Floor Varnish ..... | Inside | 1 10 0 |
| Fine Pale Paper..... | " | 2 1 0 |
| Hard Drying Oak..... | " | 1 10 0 |
| Fine Hard Drying Oak ..... | " | 1 12 0 |
| Fine Copal Varnish ..... | " | 1 13 6 |
| Best Do. ..... | " | 1 16 0 |
| Best Japan Gold Size ..... | " | 1 15 0 |
| Best Black Japan ..... | " | 1 8 6 |
| Brunswick Black ..... | | 1 4 6 |
| Berlin Black ..... | | 1 8 6 |
| Knotting (patent)..... | | 1 1 6 |
| French and Brush Polish..... | | 1 8 6 |
| Liquid Dryers in Terebene..... | | 1 8 6 |

* The information given on these pages has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information. Prices are subject to 2½ per cent. cash discount.

## PRICES CURRENT OF MATERIALS—(contd.)

See Note at top of preceding page.

### PAINTS, etc.

| | | £ s. d. |
|---|---|---|
| Raw Linseed Oil (5 galls.)..... | per gallon | 15 6 |
| Boiled Linseed Oil (5 galls.) ... | „ | 15 11 |
| Genuine White Lead (free kegs) | cwt. | 7 9 6 |
| Genuine White Lead Paint (tins free) | gall. | 2 5 0 |
| Genuine Red Lead ..... | cwt. | 7 13 9 |
| Putty (free packages) ..... | cwt. | 2 8 3 |
| Size XD quality..... | f'kn. | 8 0 |

Turpentine substitute can be obtained and prices vary according to quality from 3/10 gallon upwards.

### METALS.

| JOISTS, GIRDERS, &C., TO LONDON STATION. | PER TON |
|---|---|
| R. S. Joists, cut and fitted ..... | £34 0 0 |
| Plain Compound Girders ..... | £38 10 0 |
| Stanchions ..... | £46 0 0 |
| In Roof Work ..... | £58 10 0 |

NOTE.—These prices are for standard pieces and not special pieces of an awkward nature.

MILD STEEL ROUNDS.—To London Stations, per ton.

| Diameter. | £ s. d. | Diameter. | £ s. d. |
|---|---|---|---|
| ½ in. ... | 30 1 0 | ¼ in. ..... | 27 16 0 |
| ⅝ in. ... | 29 6 0 | ⅜ in. to 2⅜ in. ... | 27 1 0 |
| ⅞ in. ... | 28 11 0 | | |

### W.I. TUBES.

TUBES AND TUBULARS.

| | | |
|---|---|---|
| Galv. Class A. | List price, less | 12½ per cent. |
| „ „ B. | „ „ | 7½ „ |
| „ „ C. | „ Net. | |
| Black, „ A | „ less | 33 per cent. |
| „ „ B | „ „ | 22½ „ |
| „ „ C | „ „ | 15 „ |

C.I. HALF-ROUND GUTTERS.—London Works, per yd. in 6 ft. lengths.

| | Gutters. | Nozzles. | Prices ex Stop ends. |
|---|---|---|---|
| 3 in. ..... | 2/5 | 2/2 | 7d. |
| 3½ in. ..... | 2/9 | 2/5 | 7d. |
| 4 in. ..... | 2/10 | 2/7 | 1/– |
| 4½ in. ..... | 3/2 | 3/– | 1/2 |
| 5 in. ..... | 3/5 | 3/3 | 1/3 |

O.G. GUTTERS.

| | | | |
|---|---|---|---|
| 3 in. ..... | 3/2 | 2/10 | 9d. |
| 3½ in. ..... | 3/7 | 2/10 | 1/– |
| 4 in. ..... | 3/7 | 3/– | 1/2 |
| 4½ in. ..... | 3/9 | 3/5 | 1/3 |
| 5 in. ..... | 4/7 | 4/– | 1/5 |

### RAIN WATER PIPES.

| Per yd. in 6 fts. | Pipe. | Bends. Angles. | Branches. |
|---|---|---|---|
| 2 in. ..... | 5/– | 2/7 | 3/10 |
| 2½ in. ..... | 5/4 | 3/– | 4/6 |
| 3 in. ..... | 5/11 | 3/8 | 5/6 |
| 3½ in. ..... | 6/9 | 4/5 | 6/5 |
| 4 in. ..... | 7/9 | 5/3 | 7/8 |

### NET PRICES.

Tonnage allowance—4-ton lots, 5 per cent.
2-ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES.—London Prices, ex stock.

| Per yd. in 6 fts. | Pipe. | Bends. | Branches. |
|---|---|---|---|
| 2 in. ..... | 6/– | 4/7 | 5/6 |
| 2½ in. ..... | 6/4 | 5/2 | 6/10 |
| 3 in. ..... | 7/1 | 5/7 | 8/3 |
| 3½ in. ..... | 7/11 | 6/10 | 9/6 |
| 4 in. ..... | 9/1 | 7/9 | 11/1 |

L.C.C. COATED DRAIN PIPE.

| | cwt. qr. lb. per yard. in 9 fts. | Bends. | Branches. |
|---|---|---|---|
| 4 in. | 1 1 17 | 16/6 | 11/6 | 20/2 |
| 6 in. | 2 0 1 | 24/7 | 23/10 | 41/4 |

| | Per ton basis in London. £ s. d. |
|---|---|
| IRON.—Staffordshire Crown, Merchant quality..... | 29 5 0 |
| IRON—Staffordshire Marked Bars ..... | 38 0 0 |
| Mild Steel Bars ..... | 25 13 6 |
| Mild Steel Hoops ..... | 27 10 0 |

| | Ex Merchant's Stock per ton (two-ton) lots. £ s. d. |
|---|---|
| Soft Steel Sheets C.R. and C.A.— | |
| 20 gauge ..... | 32 5 0 |
| 24 gauge ..... | 33 10 0 |
| 26 gauge ..... | 34 10 0 |
| Galvanised Corrugated Sheets, 6 ft. to 9 ft.— | |
| 20 gauge ..... | 41 17 0 |
| 24 gauge ..... | 43 17 0 |
| 26 gauge ..... | 46 12 0 |
| Galvanised Flat Sheets, C.R. and C.A.— | |
| 20 gauge ..... | 42 19 6 |
| 24 gauge ..... | 44 19 6 |
| 26 gauge ..... | 47 14 6 |
| | Per ton. £ s. d. |
| Cut Nails, 3 in. and up. 1 ton lots ..... | 41 15 0 |

ALL NET.

METAL WINDOWS.—Standard Metal Windows B.S. 990. Prices on application. British Metal Window Manufacturers' Association, Ltd.

### LEAD, etc.

| (Deliveries in London, 5 cwts.) | Per ton. £ s. d. |
|---|---|
| LEAD.—Sheet, English, 3½ lb. and up ..... | 114 15 0 |
| Pipe in coils ..... | 116 0 0 |
| Soil pipe ..... | 126 0 0 |
| Compo pipe ..... | 129 10 0 |

NOTE.—Country delivery, 10s. per ton extra, lots under 3 cwt., 4s. per cwt. extra and over 3 cwt. and under 5 cwt., 3s. per cwt. extra. Extra if cut to size. Old lead, ex London area, per ton £70 0s. 0d. Buyers pay carriage.

### GLASS.

SHEET GLASS, ORDINARY GLAZING QUALITY.

| CUT SIZES. | Per ft. Super. d. |
|---|---|
| 18 oz. ..... | 4½ |
| 24 oz. clear..... | 5½ |
| 26 oz. ..... | 7½ |
| 32 oz. ..... | 9½ |

ENGLISH ROLLED PLATE AND FIGURED CATHEDRAL, ETC., IN CUT SIZES.

| Over 500 ft. super of all kinds. | Per ft. |
|---|---|
| Rolled plate, ¼ in. ..... | 7½ |
| Rough cast, 3/16 in..... | 8½ |
| Rough case, ¼ in. ..... | 8½ |
| Figure rolled, and Cathedral white ..... | 7½ |
| Figure rolled, and Cathedral tinted ..... | 10½ |
| Rolled sheet ..... | 6 |
| Reeded, Broad Reeded, Cross Reeded and Chevron Reeded, ¼ in. thick ..... | 9½ |

Rolled plate is the same price as rough cast double rolled...

| | Per ft. d. |
|---|---|
| Wire Cast, ¼ in. thick ..... | 9½ |
| Georgian Wired Cast ..... | 10 |

| HOLLOW GLASS BLOCKS. | s. d. |
|---|---|
| P.B. 2—5½ in. x 5½ in. x 3⅝ in. | 2 6 each net |
| P.B. 3—7½ in. x 7½ in. x 3⅝ in. | 3 10 „ |
| P.B. 32—7½ in. x 7½ in. x 3⅝ in. | 3 10 „ |
| Radiused Corner Brick to match up with— | |
| P.B. 2 ..... | 4 6 „ |
| P.B. 3 ..... | 6 0 „ |
| P.B. 32 ..... | 6 0 „ |

### TIMBER, SOFTWOODS and HARDWOODS.

HOME GROWN TIMBER PRICES.—*See Statutory Rules and Orders*, 1947. No. 94, price 5d. net.

IMPORTED SOFTWOODS PRICES.—*See Statutory Rules and Orders*, 1947, No. 731, price 1s. 1d.

IMPORTED HARDWOODS PRICES.—*See Statutory Rules and Orders*, 1947, No. 1524, price 1s. 1d. net.

*Note.*—The above can be obtained from H.M. Stationery Office, York House, Kingsway, W.C.2.

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A NATURAL STONE
IN STOCK
PAVINGS
FAÇADES
SHOPFRONTS
SWIMMING POOLS
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MARBLE & QUARZITE LTD
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## OFFICIAL NOTIFICATIONS

### U.K. Softwood Figures.

The Board of Trade announces that the United Kingdom production, consumption and stocks of softwood in September and October, 1949, were as follows:

| | *September*, 1949 | *October*, 1949 |
|---|---|---|
| PRODUCTION ... | 5.80 | 5.37 |
| CONSUMPTION | | |
| Imported ... | 94.58 | 88.06 |
| Home-grown ... | 5.13 | 4.43 |
| STOCKS | | |
| Imported ... | 269.31 | 328.33 |
| Home-grown ... | 7.83 | 8.77 |

### New Plywood Prices Order.

The Board of Trade has made the Plywood Prices (No. 2) Order, 1949, which came into force on January 2, 1950. The Order replaces the Plywood Prices Order, 1949, and the Plywood Prices (Amendment) Order, 1949, and provides maximum prices for some descriptions of plywood not covered by the previous Orders. The principal changes are that maximum prices are now provided for Polish pine and Russian alder and birch plywood, and for additional descriptions of Chilean pine and French gaboon plywood, and imported blockboard.

Copies of the Order (S.I. 1949 No. 2382) are obtainable, price 6d., from the sales offices of H.M. Stationery Office.

## PREFABRICATED HOUSES FOR AUSTRALIA

### Register of Contractors

BRITISH contractors interested in prefabricated building should register their names with Sir Norman Martin, Agent-General for Victoria, Victoria House, Melbourne-place, Strand, W.C.2, to ensure that they receive particulars of the new Victorian Government proposal to purchase a further 1,000 prefabricated houses. The Agent-General points out that 1,450 houses have already been ordered from Britain, 1,000 for the Victorian Railways, and 450 for the Victorian State Electricity Commission. He points out that the new proposal is the first move in a determined effort by the State of Victoria to catch up with its arrears of houses, brought about mainly by the large number of immigrants who are arriving from Britain.

### Diaries and Calendars.

We acknowledge with thanks diaries and calendars from Mr. James L. Bacon (photographer); Harrison and Co. (Builders' Merchants) Ltd.; Ozalid Co., Ltd.; the St. John's Timber Co., Ltd.; Thomas Bolton and Sons, Ltd.; W. and M. Negus, Ltd.; Mackay Industrial Equipment, Ltd.; V. W. Gibson and Co.; R. B. Burden, Ltd.; R. K. Burt and Co. (paper agents); and the Kynoch Press. Also a magnifying glass from Messrs. Ruddock and Meigham, Ltd., builders; and a scale from the Successors to Shapland and Petter, Ltd., joinery manufacturers.

### Housing Scheme, Kingston.

In our article on the housing scheme at Cambridge-gardens, Kingston (*The Builder*, December 16), it was stated that reinforced concrete works were designed by Indented Bar, Ltd., and executed by Caxton Floors, Ltd. We have since been informed that Indented Bar, Ltd., were responsible for the design of the reinforced concrete work in the foundations only and that Caxton Floors, Ltd., were responsible for the design and construction of all reinforced concrete work in the superstructure.

# The Scottish Builder

## State Grants

A MEMORANDUM describing the financial assistance available for the improvement of housing accommodation by local authorities, private persons, housing associations and new town development corporations under Part II of the Housing (Scotland) Act, 1949, has been issued by the Department of Health for Scotland to local authorities. The main objects of Part II of the Act are to bring up to modern requirements houses which are sound in structure but do not reach the standards of convenience and amenity which are now expected; to combine existing small dwellings so as to produce satisfactory houses; and to provide for the sub-division and convertion of large houses.

It is emphasised that the main effort of the housing labour force must be concentrated on the provision of new houses—in the words of the memorandum: "The improvement of existing houses, which may, in fact, involve the loss of separate dwellings, cannot be regarded as an adequate substitute for new building. Side by side with new building, however, the improvement of existing houses can make a valuable contribution to the better housing of the people."

The memorandum makes it clear that public money will not be spent on improvements unless they will provide accommodation which is up to a satisfactory standard. The resulting house must normally have a "life" of at least 30 years, but this may be reduced in special circumstances to not less than 10.

The annual Exchequer contribution to the cost of improvements by local authorities will be three-quarters of the local authorities' estimated annual loss over 20 years from the date of completion of the work. In the Highlands and Islands it will be seven-eighths of the estimated annual loss. For improvements by private persons local authorities can make grants up to half of the estimated cost. This cost must not, however, be less than £100 or more than £600 (except in special circumstances) for each resultant dwelling. Local authorities making such grants receive an Exchequer contribution of three-quarters (seven-eighths in the Highlands and Islands) of their annual loan charges over 20 years. The Exchequer contribution may be higher for houses of architectural or historic interest.

No grant can be made for the improvement of any house for which a grant has already been made under the Housing (Agricultural Population) (Scotland) Act, 1938, the Hill Farming Act, 1946, or the Agriculture (Scotland) Act, 1948, and before a grant can be given for any house occupied under a "service tenancy" the house must first be "untied."

Grants may be paid either after completion of the work or in instalments during the progress of the work. All grants are conditional upon the work being carried out to the satisfaction of the local authority.

The rent of a dwelling improved or converted by a private person must not be increased by more than 6 per cent. of the cost of improvement incurred by the applicant. Where a house has not been let for five years before the application or where an entirely new dwelling is created by the carrying out of the improvement work, the local authority must fix a maximum rent.

Local authorities can make arrangements with housing associations or new town development corporations for improving or converting houses. A leaflet for the guidance of private persons who wish to apply for grants is being prepared and copies will soon be obtainable from local authorities.

## Clyde Valley Plan

A CLYDE VALLEY Regional Planning Advisory Council is to be set up to establish co-operation among local authorities interested in Sir Patrick Abercrombie's plan for the region. The meeting at which the decision was taken was convened by the Secretary of State for Scotland, Mr. Arthur Woodburn. A small working party has been appointed to draw up a proposal for the constitution and working arrangements for the co-ordinating council under the chairmanship of Bailie Thomas R. Patterson, convener of the Glasgow Planning Committee. The first meeting of the working party will be held in the middle of January.

Mr. Woodburn emphasised that care must be taken to preserve the natural beauties of the region while achieving the maximum development of its wealth. These were the general problems facing the proposed council which would become in due course a statutory body, working under the approval of the Secretary of State in accordance with the provisions of the Town and Country Planning Act.

## November Housing Figures

THE number of new permanent houses completed in Scotland during November was 2,019, a decrease of 154 on the total for the same month last year. Altogether, 94,302 new houses have now been completed in Scotland under the post-war housing programme. Including conversions, adaptations, etc., the total of new homes is now 107,400.

Of the 2,019 permanent houses completed during the month, 1,899 (including houses completed by the Scottish Special Housing Association) were erected by local authorities, 57 by private enterprise and 63 by Government Departments.

## BUILDING TRADE WAGES IN SCOTLAND

Following are grade rates authorised by the Scottish N.J.C. from December 5, 1949. Every effort is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classification A Craftsmen.... 2/10 Labourers.... 2/3½

| | | | |
|---|---|---|---|
| Aberdeen .....A | Dumfriesshire ....A | Inverness .....A | Perthshire .....A |
| Ayrshire .....A | Dundee .....A | Inverurie .....A | Peterhead .....A |
| Banff .....A | Dunoon .....A | Kincardineshire ..A | Renfrewshire .....A |
| Berwickshire .....A | East Fife .....A | Kinross-shire .....A | Rothesay .....A |
| Bridge of Allan....A | East Lothian .....A | Lanarkshire .....A | Roxburghshire ....A |
| Broughty Ferry....A | Edinburgh .....A | Midlothian .....A | St. Andrews .....A |
| Clackmannanshire A | Fifeshire .....A | Monifieth .....A | Selkirkshire .....A |
| Doune.....A | Forfarshire .....A | Moray and Nairn ..A | Stewartry .....A |
| Dunblane .....A | Glasgow .....A | Newport .....A | Stirlingshire .....A |
| Dunbartonshire....A | Greenock .....A | Peeblesshire .....A | Stornoway .....A |
| Dumfries .....A | Hamilton .....A | Perth .....A | Tayport .....A |
| | | | West Lothian .....A |

The Scottish N.J.C. award on which this is based provides for variation to current rates of Apprentices and Trainees' wages, which will be increased according to scale.

The Information given in this table is copyright.

Painters' rates : 2/10 Grade A ; 2/9 Grade B. (Grade B towns are Banff and Moray and Nairn.)

## NEW BUILDINGS

**Aberdeen.**—An extension to the technical college building of Robert Gordon's College, Aberdeen, at an estimated cost of £46,500, has been approved by the Governors. The scheme has been provisionally approved by the Scottish Education Department.

**Auchinairn.**—Plans to be prepared for alterations and additions to the Public School, for which the architect is William Watt, Albert-rd., Motherwell-Wishaw.

**Ayr.**—Plans in hand for corporation scheme of housing scheme estimated to cost £108,342, consisting of 66 houses to be erected on the Dalmelling housing site, for which the architect is Thomas O'Brien (F.), Municipal-bldgs., High-st. Corner, Ayr. Estimated to cost £120,000, a scheme of extensions at The Salgans-rd. is to be carried out from plans by their own architects by The Scottish Agricultural Industries, Ltd., 199, High-st., Ayr.

**Ayrshire.**—C.C. have a scheme estimated to cost £23,484 consisting of extension annexe at St. Leonard's-rd. as addition to Ayr Grammar School, for which the architect is Mr. R. G. Lindsay (F.), County-bldgs., Wellington-sq., The Sandgate, Ayr.

**Bellshill.**—Plans to be prepared for 18 houses to be erected for Osbourne Parish, for which the architect is Samuel MacColl, County-chbrs., Beckford-st., Hamilton.

**Edinburgh.**—Warrant granted by Dean of Guild Court for erection of a new roof and straw shed at Heriot Brewery, Roseburn-terr. (John Jeffrey & Co., Ltd.) at £32,000. Plans by Blyth & Blyth, 135, George-st. Warrant granted to Scottish Garden City Housing Society, Ltd., for the erection of 24 dwelling houses at Muirhouse, Pilton, at £35,000. Warrant granted to T. & H. Smith, Ltd., Wheatfield-rd., for erection of boiler-house at £24,050.

**Glasgow.**—Additions and alterations, etc., for the Glasgow U.F.A., 64, Bothwell-st., W.C.2, to be carried out at Carrick-st., Anderston, for which the architect is James Oliver, 41, Marksworth-ave., Dalry, Ayrshire.

**Glasgow.**—Plans to be prepared for new halls, etc., at Dundee-dr., for which the architects are William Baillie & Son, The Accountance Hall, West Regent-st., Glasgow. Plans are to be prepared for Cameron and Campbell, Ltd., for alterations and additions at 171 to 181, Douglas-st., for which the architects are Honeyman, Jack & Robertson, 92, Bath-st, Glasgow, W.C.2.

**Glasgow.**—Plans to be prepared for additions, etc., to the works at Kilbirnie-st., by the architects of the Scottish Gas Board, 6, Randolf-cres., West End, Edinburgh.

**Kirkcudbrightshire.**—C.C. intend to erect on a site at Dalbeattie a new secondary school, for which the architect is Archibald J. Caldwell (L.), Stewartry County A., Council-bldgs., Kirkcudbright.

**Lanarkshire.**—Plans are to be prepared for new halls for the Anniesland T.G.M., which are to be erected at Lindon-st. and Ratcliffe-rd., Anniesland, Glasgow, and for which the architect is John Ratcliffe, 29, Queen Mary-ave., Langside-rd., Glasgow, S.

**Lanarkshire.**—Plans to be prepared for alterations at The Robroyston Hospital by the architects of the Board of Glasgow Northern Hospitals, 113, Balarnoch-rd., Glasgow.


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# FUTURE CONSTRUCTION

## PUBLIC APPOINTMENTS

*Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.*

## CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

### BUILDING

**JANUARY 9.**

†***Welsh Regional Hospital Board.**—Conversion of Isolation Hospital into medical wards, Llandudno, and extension to nurses' home, Llandudno General Hospital. C. B. Pearson & Son (F.), 18, Dalton-sq., Lancaster.

**JANUARY 12.**

†***Bristol T.C.**—New Primary School at Barrack-la., Avonmouth. J. Nelson Meredith (F.), City A., Eagle House, Colston-ave. Dep. £2 2s.

†***Peterborough R.D.C.**—40 houses at Welmore-rd., Glinton. S. Dodson & Son, Museum-bldgs., Prestgate. Dep. £2 2s. Tenders by February 9.

**JANUARY 13.**

†***Bethnal Green B.C.**—48 flats at Thoydon-rd. T.C., Town Hall. Dep. £5 5s.

†***Bristol T.C.**—Reconstruction of Colston Hall. City A., Eagle House, Colston-ave. Dep. £2 2s.

†***North Riding C.C.**—Police house, office and garage, Hunton, nr. Bedale. County A., Northallerton. Dep. £2 2s.

**JANUARY 14.**

†**Llanidloes T.C.**—24 houses with roads, sewers and water mains. T.C. Dep. £3 3s.

**JANUARY 16.**

†**Chipping Norton R.D.C.**—Ten houses at Steeple Barton. H. Cooper & Sons, 51, Cornmarket-st., Oxford.

†***Enfield U.D.C.**—Public convenience at Southbury-rd. E. & S. Dep. £2 2s.

†***Harrow U.D.C.**—30 dwellings, Honeypotla. estate, Kenton. E. & S. Dep. £2 2s. Tenders by February 6.

**Kingsbridge R.D.C.**—12 houses at Aveton Gifford. C. Webber, architect, Manor House, Kingsbridge, Devon. Dep. £2 2s.

†***Lincoln No. 3 Hospital Management Committee.**—Two pairs of houses, etc., Caistor Institution. Vallance & Westwick, architects and surveyors, White Hart-st., Mansfield. Dep. £2 2s.

**Ryde T.C.**—Eight pairs of houses at Salters-rd., B.S., 5, Lind-st. Dep. £2 2s.

†***St. Marylebone B.C.**—Erection of blocks of flats. Housing Director, 128, Baker-st., W.1.

**JANUARY 17.**

**Aylesbury R.D.C.**—13 pairs in 3 contracts of houses at 3 sites. R. C. White, 4, Temple-sq. Dep. £2 2s. each contract.

†***Ipswich C.B.**—76 houses in 3 contracts at Castle Hill estate. B.E. & S., 19, Tower-st. Dep. £2 2s. Tenders by February 16.

**Isle of Wight R.D.C.**—16 houses at Freshwater. E. L. Smith & Son, architects, Melvillechbrs., Sandown, I.o.W. Dep. £5 5s.

†***Northamptonshire Standing Joint Committee.**—30 police houses on various sites. County A., Northampton.

***Salford T.C.**—Extensions, alterations and restorations at Children's Reception Home, Bury New-rd. City E., Town Hall. Dep. £2 2s.

**JANUARY 18.**

**Bolton T.C.**—29 houses at Leonard-st. estate. Housing Director, Town Hall. Dep. £1 1s.

***Thurrock U.D.C.**—Public convenience, King George's Field, Blackshots-la., Little Thurrock. C. S. H. Hawkes, E. & S. Dep. £1 1s.

**JANUARY 20.**

**Marlborough and Ramsbury R.D.C.**—Four houses at Baydon. S., R.D.C. Offices, Marlborough. Dep. £3 3s.

**JANUARY 23.**

**Manchester T.C.**—Conversion of "C" Home and "D" Home at "Newholme," Nell-la., West Didsbury. City A. Dep. £1 1s. each.

†***West Sussex Standing Joint Committee.**—Extension of Training School to provide lecture room and additional sleeping accommodation at Police Headquarters, Kingsham-rd., Chichester.

**JANUARY 24.**

***Ilford T.C.**—Nine garages at Budoch-court, Goodmayes, and 9 on Oak-la. estate, Ilford. B.E. & S. Dep. £2 2s.

**JANUARY 26.**

†**Bournemouth C.B.**—27 houses, Kinson estate. Boro' A. Dep. £2 2s.

**Clutton R.D.C.**—Eight houses at Ston Easton with sewer and road works. Thomas and Morgan & Partners, 23, Gelliwastad-rd., Pontypridd. Dep. £3 3s.

**JANUARY 27.**

***Bullington R.D.C.**—16 houses, Tetsworth. H. W. Smith (F.), 29, George-st., Oxford. Dep. £2 2s.

***Great Yarmouth C.B.**—Maternity and child welfare clinic, Middlegate-st. B.E.

**JANUARY 28.**

***Barnes T.C.**—Public library, Sheen-la., S.W.14. W. R. Shepherd, B.E. & S. Dep. £2.

***Widnes T.C.**—Six shops with 3 flats over at Hale-rd. estate. T. A. Brittain, A., Boro' A., Brendan House, Widnes-rd. Dep. £2 2s.

**JANUARY 30.**

**Southwell R.D.C.**—20 houses with roadway, footpaths, etc., at Southwell-rd., Eakring. S. Cooper, 8, Westgate, Southwell, Notts. Dep. £2 2s.

**JANUARY 31.**

**Berwick-upon-Tweed T.C.**—Three pairs of house-shops with fencing and drainage works at Prior Park estate. B.S., Municipal-bldgs. Dep. £1 1s.

†***Hampshire C.C.**—Secondary school at Romsey-rd., Winchester. County A., The Castle, Winchester. Tenders by March 8. Dep. £3 3s.

**FEBRUARY 1.**

***Eton R.D.C.**—Three pairs of aged persons' bungalows, High-st., Colnbrook. E. & S. Dep. £3 3s.

**FEBRUARY 3.**

**Crayford U.D.C.**—32 houses and 15 bungalows at Slade Green housing scheme, No. 22, Part 1. E. & S., Town Hall. Dep. £2 2s.

**FEBRUARY 4.**

**Baildon (Yorks) U.D.C.**—22 houses at Knoll estate. William Illingworth & Son, 15, Sunbridge-rd., Bradford.

**FEBRUARY 7.**

***Gateshead C.B.**—Kitchen/dining-hall at South-st. school. H. J. Cook (A.), Chief A., Swinburne-st. Dep. £5 5s.

**FEBRUARY 8.**

***Hitchin U.D.C.**—Six garages, Purwell-la. estate and 6, Highover estate. S. Dep. £3 3s.

***Hitchin U.D.C.**—28 houses, Purwell-la. estate. S. Dep. £3 3s.

**FEBRUARY 11.**

***Windermere U.D.C.**—20 houses, Oldfield estate. Walker, Carter and Walker, architects, Crescent-rd. Dep. £2 2s.

**FEBRUARY 14.**

***Bournemouth C.B.**—72 flats, Kinson estate. Boro' A. Dep. £2 2s.

**FEBRUARY 27.**

**Beverley T.C.**—Erection of steel opening bridge over River Hull. B.E. & S., Municipal Offices. Dep. £3 3s.

**NO DATE.**

***Cowes Estates, Ltd.**—Demolition of East Cowes Castle. Arthur S. Cripps, F.I.A.A. & S., 6, Shooter's Hill, Cowes, I. of W.

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### PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

**JANUARY 14.**

†***Essex C.C.**—Redecorations, drainage works, etc., Kelvedon House children's home, Kelvedon. H. Conelly (F.), County A., Chelmsford.

**JANUARY 18.**

**Kingston-upon-Hull T.C.**—City E. (Materials).
**Oxfordshire C.C.**—County S. (Materials).

**JANUARY 20.**

**Cambridgeshire C.C.**—County S. (Materials).
**Carshalton U.D.C.**—E. & S. (Materials).

**JANUARY 21.**

**Bootle C.B.**—B.E. & S. (Materials).
**Farnborough U.D.C.**—E. & S. (Materials.)
**Middlesex C.C.**—County E. & S. (Materials).

**JANUARY 23.**

**Cumberland C.C.**—County S. (Materials.)

**JANUARY 25.**

**Epping U.D.C.**—S. (Materials.)
***Gillingham T.C.**—B.E. & S. (Materials.)
**Gillingham T.C.**—B.E. & S. (Materials).
**Hackney B.C.**—B.E. & S. (Materials).
**Wood Green T.C.**—B.E. & S. (Materials).

**JANUARY 27.**

**Croydon C.B.**—B.E. (Materials).
**York T.C.**—City E. & Architect (Materials).

**JANUARY 28.**

**St. Pancras B.C.**—T.C. (Materials).

**JANUARY 30.**

**Beckenham T.C.**—B.E. (Materials.)
***Birmingham T.C.**—Painting exterior woodwork of 2,192 houses, paints being supplied. Wallace Smith, General Manager, Estates Dept., 19-29, Summer-row.
**Cornwall C.C.**—County S. (Materials).
**Merioneth C.C.**—County S. (Materials).
**West Suffolk C.C.**—County S. (Materials).

**JANUARY 31.**

**Fareham U.D.C.**—E. & S. (Materials).
**Hunts C.C.**—County S. (Materials).
**Lincoln C.C.**—County S. (Materials).

**FEBRUARY 1.**

**Jarrow T.C.**—B.E. (Materials).

**FEBRUARY 3.**

**St. Marylebone B.C.**—T.C. (Materials).
**Tottenham T.C.**—T.C. (Materials).

**FEBRUARY 4.**

**Swansea C.B.**—B.E. & S. (Materials).

**FEBRUARY 7.**

**Goole T.C.**—B.E. & S. (Materials).

**FEBRUARY 18.**

**Horbury U.D.C.**—E. & S. (Materials).

**FEBRUARY 25.**

**Malden and Coombe T.C.**—B.E. (Materials).

**MARCH 1.**

**Radcliffe T.C.**—B.E. & S. (Materials.)

### ROADS, SEWERAGE AND WATER WORKS

**JANUARY 12.**

**Nuneaton T.C.**—Roads and sewers and reinforced concrete culvert at Marston estate. B.S., Council House. Dep. £2 2s.

†***West Sussex C.C.**—Reconditioning main drainage system at North View, East Preston. F. R. Steele, County A.

**JANUARY 16.**

***Lincoln (Lindsey) C.C.**—Site works, etc., for police buildings and magistrates' court, Scunthorpe. C. B. Pearson & Son (F.), architects, 18, Dalton-sq., Lancaster.

**JANUARY 20.**

**Norton R.D.C.**—Water main extensions and works for water supply at various parishes. Consulting E., 12, Valley Bridge-parade, Scarborough. Dep. £3 3s.

**JANUARY 26.**

**Doncaster C.B.**—Roadworks at Intake housing estate. Estates S., 15, South-parade. Dep. £3 3s.

**JANUARY 28.**

***Wycombe R.D.C.**—Roads and sewers, Berryfield housing estate, Princes Risborough. J. M. Smith (F.), architect and surveyor, 100, Easton-st., High Wycombe. Dep. £5 5s.

**JANUARY 31.**

†**Bingley U.D.C.**—Main sewerage and sewage disposal works at Dowley Gap, Harecroft and Castlefields. D. Balfour & Sons, 131, Victoria-st., Westminster, S.W.1. Dep. £10.

†**Hitchin R.D.C.**—Water main extensions at Pirton and Hexton. D. Balfour & Sons, 131, Victoria-st., Westminster, S.W.1. Dep. £5.

**FEBRUARY 1.**

**Sturminster R.D.C.**—13,000 yds. of 9 in., 7,500 yds. of 4 in., 3,700 yds. of 3 in. spun-iron and asbestos cement water mains, etc., also construction of reservoirs and pumping station. Aubrey J. Allen, F.R.I.C.S., Half Moon-st., Sherborne, Dorset. Dep. £5 5s.

**FEBRUARY 6.**

**Brierley Hill U.D.C.**—Road and sewer works at Kingswinford site. E. & S.

**FEBRUARY 11.**

***Windermere U.D.C.**—Street and sewer works in connection with permanent housing on Oldfield estate. E. & S. Dep. £2 2s.

**FEBRUARY 13.**

**Walsall C.B.**—Site levelling, roads and sewers at Gipsy-la. estate. B.E. & S. Dep. £3 3s.

**FEBRUARY 24.**

**Kingsclere and Whitchurch R.D.C.**—1,560 yds. of 4-in. and 260 yd. of 3-in. dia. spun-iron supply main, etc., at Haughurst-hill, Haughurst. Lemon & Blizard, 59 Tufton-st., Westminster, S.W.1. Dep. £2 2s.

## GENERAL BUILDING WORK

### (LONDON)

**Caterham.**—REPAIR SHOP.—Caterham and Warlingham U.D.C. are to erect a repair shop, Chaldon-rd. Depot. Council's architects have prepared plans.

**Caterham.**—FLATS.—B. Poulter, "Stonebanks," Marks-rd., Warlingham, is architect for 22 flats for elderly ladies, Banstead-rd.

**Caterham.**—HOUSES.—U.D.C. propose 5 pairs of houses, Nelson-rd., to plans by council's architects.

**Caterham.**—HOUSES.—18 pairs of houses are to be erected by U.D.C. at Essendene-rd. Plans by council's architects.

**Caterham and Warlingham.**—HOUSES AND FLATS.—U.D.C. have amended proposals for housing at Crewes-ave. to comprise 20 houses on north side and 8 houses and 12 flats, south side. Plans by council's architects.

**Hornchurch.**—HOUSES.—Building and T.P. Comm. approved amended plan submitted by L. G. Holden, builder, 2, Newbury-gdns., Upminster, for 30 houses, Lingfield-ave.

**Hornchurch.**—SHOPS AND DWELLINGS.—Marylands Green Estate Co., Ltd., propose 13 shops with living accommodation over at Albany-rd.

**Kensington.**—AGED PERSONS DWELLINGS.—Boro' E. has submitted scheme for erection of 16 aged persons' dwellings, Balgrove-rd. site.

**Kensington.**—DWELLINGS.—B.C. are investigating possibility of developing for housing purposes the site formerly occupied by St. Mark's-pl. Baptist Chapel, upon which it may be possible to accommodate 9 flats.

**Kensington.** — FLATS. — B.E. has submitted sketch plans for erection of 30 flats, Holland-st.

**Kingston.** — REINSTATEMENT. — M.H. has approved proposal to reinstate Ashcombe block, County Hall, Surrey, at £40,000. Scheme by County Architect's Department.

**Lewisham.**—GARAGE WORKSHOP, SHOWROOM AND DWELLINGS.—White Cooper & Turner, F.R.I.B.A., Amberley House, Norfolk-st., Strand, W.C.2, are architects for rebuilding garage workshop, showroom and residential premises at Nos. 139-143, Sydenham-rd.

**Lewisham.** — REBUILDING. — Boro' A. has applied to rebuild Nos. 4-16, Glenfarg-rd.

**Oxford-st.**—RE-BUILDING.—North and Partners, F.R.I.B.A., Queen-st.-chbrs., Maidenhead, Berks, are architects for re-building Nos. 376-384, Oxford-st.

**Pont-street, S.W.**—CHURCH.—The Ministry of Works has given permission for rebuilding of St. Columba's (Church of Scotland), Pont-st., which was bombed in 1941. The permit allows the clearing of the site and the building of the lower part of a new church. The architect is Edward Maufe, R.A., F.R.I.B.A., 139, Old Church-st., Chelsea, S.W.3.

**Rainham.**—HOUSES.—Building and T.P. Comm. have approved amended plan prepared by W. Goodchild & Co., surveyors, 85, South-st., Romford, for 14 houses at Rothbury-ave.

**Rainham.** — ADDITION. — Rainham Sawmills, Ltd., Ferry-la., propose an addition to their engineers' shop.

**Rainham.**—ALTERATIONS.—Hornchurch Building and T.P. Comm. approved plans by Architects' Dept., Charrington & Co., Ltd., for alterations to Cauliflower P.H., Upminster-rd.

**Streatham.**—HOUSES.—B.C. propose 7 houses, Crowborough-rd. site. Plans by Council's architects' dept.

**Walthamstow.**—EXTENSIONS.—S. Noton, Ltd., Blackhorse-la., E.17, propose to extend store and provide first floor in warehouse at their Blackhorse-la. works.

**Walthamstow.**—SCHOOL CANTEEN.—Searle & Searle, AA.R.I.B.A., Amen House, Warwick-sq., E.C.4, are architects for canteen at Forest School.

**Walthamstow.**—HOUSES AND FLATS.—F. Greenwood, A.R.I.B.A., 25, Liverpool-rd., Kingston Hill, Surrey, is to prepare scheme for erection of 21 houses and flats in Wyatts-la., for B.C.

**Warlingham.**—FLATS AND HOUSES.—Caterham and Warlingham U.D.C. propose 16 flats and 2 s-d houses, Farm-rd. Council's architects have prepared plans.

**Wood Green.**—FACTORY.—Barratt & Co., Ltd., Mayes-rd., propose rebuilding factory premises.

### (PROVINCIAL)

**Alnwick.**—40 houses to be erected by R.D.C. Council's A., T. J. Cahill, Lloyds Bank-chbrs., Alnwick.

**Amble.**—U.D.C. to build 20 houses next year.

**Billingham-on-Tees.**—Layout plans have been prepared by U.D.C. surveyor (J. H. Hill) for land north of John Whitehead Park showing 320 new houses with shops, church school, old people's hostel, etc. An amended scheme has been prepared by surveyor for extending Billingham Civic Restaurant, at £5,386. Furness Shipbuilding Co., Ltd., Haverton Hill, to rebuild 25 houses. Isley & Nicholson, builders, Stockton, to erect four houses, St. Bede's-rd.

**Birmingham.**—T.C. propose modernisation of Erdington Cottage Homes, at £58,500. H. J. Manzoni, City E.

**Birmingham.** — Regional Hospital Board approved works at following hospitals for 1950: Lea Castle Colony (£154,000); Taylor Memorial Home of Rest (£15,000); Coventry and Warwickshire (£70,166 and £57,000); Warneford (£5,000). Chief architect to Board, D. A. Goldfinch, 10, Augustus-rd., Birmingham.

**Blackrod.**—U.D.C. seek loan of £49,141 for 38 houses, Half Acre-la. site (4th section).

**Blyth.**—T.C. propose to build communal washhouses at est. cost of £7,000. Plans by Boro' E., D. W. Foster.

**Bromsgrove.**—U.D.C. approved plans for extensions to factory, Sugarbrook, for Messrs. Tropicalisation & Packing Co.

**Bromsgrove.**—R.D.C. propose 20 houses for I.C.I. at Stoke Works. Plans by Folkes & Folkes.

**Burton-on-Trent.** — Birmingham Regional Hospital Board propose alterations at General Infirmary to provide pathological laboratory and physicians' suites.

**Bury.**—T.C. to prepare scheme for cold storage accommodation. Approved plans for:—Extensions, Hudcar-la., for Bury Felt Manufacturing Co., Ltd.; extensions, Bambury-st., for C.S.K. Plastics, Ltd.; garage and motor showrooms, Millett-st., for Cliff Holden (Motors), Ltd.

**Carlisle.**—B.C. received allocation of 290 houses for 1950. Approved layout for eight shops and flats, Upperby Estate.

**Chapel.**—R.D.C. to prepare layout for 20 houses, Hope.

**Chester-le-Street.**—200 houses to be built this year by R.D.C.

**Darlington.**—Bussey & Armstrong, builders, Brinkburn-rd., Darlington, are to erect four houses, Farndale-cres., Darlington, and Simpson Rolling Mills, Ltd., are to build test house, Whessoe-rd. Darlington Co-op. Industrial Society are to erect bakery and garages, Neasham-rd. War Dept. are planning H.Q. for Northumbrian District on Mowden Estate. T.C. has approved site on Firth Moor housing estate for old people's hostel. T.C. received sanction to borrow £13,641 for 10 houses on Haughton site north, and £19,000 for purchase of 79 acres on Haughton and Springfield sites.

**Derbyshire.**—E.C. propose junior mixed and infants' school, Marlpool Farm site, Heanor.

**East Northumberland.**—Local authorities have approved scheme to build crematorium at an estimated cost of £40,000. W. Hall, Surveyor, Bedlington Urban Council.

**Heaton.**—C. A. Parsons & Co., Ltd., engineers, Heaton, Newcastle, propose a paint-spraying dept. and an engine test house at their works. Plans by their staff architect, J. Wharrier.

**Hebburn-on-Tyne.**—Page, Son & Hill, 75, King-st., South Shields, have submitted revised layout for Campbell Park No. 2 housing site. Territorial Association is in touch with U.D.C. regarding proposed erection of T.A. centre, Victoria-rd. West. U.D.C. has been allocated 190 houses for 1950.

**Limehurst.**—R.D.C. seek loan of £60,500 for 44 houses, Waterloo estate. Surveyor, H. Bradshaw.

**Newcastle-on-Tyne.**—City Council's building programme for 1950 will include 1,200 houses.

**Newcastle-on-Tyne.**—City Council's plans for building multi-storeyed flats for 4,000, at Longbenton, has been approved in principle by M.H. George Kenyon, 18, Cloth-market, Newcastle, is City A.

**Newcastle-on-Tyne.**—C. Solomon, 26, St. Mary's-pl., Newcastle, is architect for alterations for offices, Grainger-st., for Browns, Ltd., furnishers. Revised plans have been prepared by Cackett, Burns Dick & Mackellar, 21, Ellison-pl., Newcastle, for boiler-house, Coast-rd., for Lees Bakeries, Ltd. Dryden & Shaw, 6, Market-st., Newcastle, are architects for proposed 54 dwellings at Silver Lonnen, for E. Jeffcock, Ltd., builders, New Bridge-st., Newcastle. Rochester & Kirk, builders, Lanercost-dr., Newcastle, propose 12 houses, Lanercost-dr. Dryden & Shaw, 6, Market-st., Newcastle, have prepared plans for lorry dock and plant house, Forth Banks, for Stephenson & Hawthorns, Ltd. Northern Coal Board (Architects' Dept.), Shotley Bridge, Co. Durham, have prepared plans for converting premises, Grainger-st., into offices. J. R. Wetherell, 19, Picton-pl., Newcastle, is architect for rebuilding part of confectionery works, Pitt-st. and Barrack-rd.

**Newcastle (Staffs).**—C. Leach & Co., confectionery manufacturers, Barrack-rd., are to partly rebuild their factory. Architects, J. R. Weatherell & Lamb, Tweedholme, Picton-pl., Newcastle.

**Nottingham.**—T.C. propose 210 houses and 16 garages, Streeley estate. City E., R. M. Finch.

**Nottingham.** — Sheffield Regional Hospital Board propose new twin operating theatre at City Hospital. Plans by City A.

**Oldham.**—B.C. received M.O.E. approval to final plans for primary school at Limehurst; propose adaptation of "Glenthorne," as nurses' home. Approved plans for: Conversion of shelter to canteen, Central Mill, Woodstock-st., for Central Mill Co., Ltd.; 32 houses, College-av., Shirley-rd., and Everton-rd., for G. & S. Bloor, Ltd.; alterations and extensions to factory, Wrigley-st., for Carrier Engineering Co., Ltd.; extensions to foundry, Crossbank-st., for John Hall & Son (O/M), Ltd.; nursery school, Roundthorn-rd., for E.C. B.C. propose further 116 houses, Limeside estate.

**Orrell.**—U.D.C. to invite tenders shortly for 24 bungalows, Moor-rd. estate. Surveyor, F. Butterfield.

**Oswestry.**—R.D.C. propose 10 houses, Whittington; four, Knockin; and four, Top Hengoed. Plans by S. T. Walker, F.R.I.B.A., 83, Suffolk-st., Birmingham.

**Rochdale.**—B.C. approved plans for:—Rebuilding and extension of finishing department, Fieldhouse Mill, for J. Bright & Bros., Ltd.; alterations, Bull's Head, Halifax-rd., for T. Ramsden & Son, Ltd.; alterations, Commercial Inn, Drake-st., for Crown Brewery Co., Ltd. B.C. propose adaptation of 119-121, Merefield-st., as hostel.

**Salford.**—T.C.'s 1950 programme:—Medical blocks, dining-rooms and site works at St. Joseph's R.C. Junior and Infants' School; St. Thomas of Canterbury R.C. School; and Stowell Memorial School; improvements at controlled schools (£5,000); general improvements to nursery schools (£10,000); conveniences, North Grecian-st. (£5,000), additional classrooms, various schools (£16,352); holiday home for children, North Wales (£6,800); new health clinics (£6,750); new day nurseries (£42,000); temporary new library, Pendleton (£15,000); new wash houses, Weedall-st. and Holland-st. (£25,000); 44 flats, Lord-pl. (£25,000); 27 flats and four old people's homes, Park-pl. (£25,000); 16 houses, Devonshire-rd. (£18,000); 33 flats, Bury-st. (£50,000); 30 flats, Cumberland-st.

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The zinc oxide manufacturers also announce that from December 30, the prices of zinc oxide, in lots of not less than two tons, delivered buyers' premises, has been increased by £1 15s. as follows:—

| | New Price | Old Price |
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| | £ s. d. | £ s. d. |
| Red Seal ... ... | 84 0 0 | 82 5 0 |
| Green Seal ... ... | 85 10 0 | 83 15 0 |
| White Seal ... ... | 86 10 0 | 84 15 0 |

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(£26,000); eight houses, Lostock-rd. (£8,000); 177 flats, Trinity area (£100,000); 264 flats and seven shops, Eccles New-rd. (£100,000); fire precautions at Technical College (£5,000); adaptation of "Fernwood" as home for aged. City E., W. A. Walker.

**Seaham.**—East Durham Co-op. Chemists, Ltd., Ryhope, have applied for sites on Westlea Estate for shop premises. Plans have been prepared by C.W.S. Architects' Dept., 90, Westmorland-rd., Newcastle-on-Tyne, for alterations to No. 6, Queen Alexandra-rd. for East Durham Co-op. Chemists. U.D.C. to erect public conveniences at The Avenue. J. D. Dart, Castlereagh-rd., Seaham, is to extend café. U.D.C. has applied to M.H. for a bigger housing allocation to deal with slum clearance. Council has been allocated 105 houses for 1950.

**Sedgefield.**—R.D.C. is to build 40 houses at West Cornforth and 24 at Ferryhill. Plans by Housing A., J. Hepps, Council Offices, Sedgefield, Co. Durham.

**South Shields.**—R. Collins, Russell-bldgs., King-st., South Shields, is architect for converting "Rockcliffe," Westoe Village, into old people's hostel, for T.C., and additions to factory, Station-rd., for Burndept, Ltd. E.C. has instructed J. Wilkes, 72, Sunderland-rd., South Shields, to prepare preliminary plans for proposed additions to South Shields Boys' High School. Northern Press, Ltd., publishers, Barrington-st., South Shields, intend proceeding soon with alterations. Firm's architect, F. W. Newby, 41, Harton-gr., South Shields.

**Stockport.**—B.C. plan £2,000,000 estate, Brinnington. Work to commence during Spring. Plans by surveyor, W. F. Gardner.

**Stockton-on-Tees.**—R.D.C. to build 50 houses, 1950.

**Stockton-on-Tees.**—Plans to be considered by T.C. for £16,000 scheme for bandstand and auditorium (to be used also as open-air theatre), Ropner Park. Boro' E. to prepare scheme for reconstructing bridge No. 8 on Castle Eden branch line. T.C.'s plans to build 100 houses by direct labour, at £119,821, have been approved by M.H. Sketch plans have been forwarded to M.O.E. by E.C. for additions to Ragworth Open-Air School and Norton High-st. School. F. W. Turnbull, White House, Carlton, has prepared layout plans for 51 houses, Grange-av., etc., for Marsh (Builders), Ltd., Stockton.

**Sunderland.**—H. C. Bishop, Boro' A., Stockton-rd., Sunderland, has prepared plans for community centre, Barclay-st., and additions to school clinic, Mowbray-ter., for E.C.

**Wallsend.**—T.C. received M.H. sanction to borrow £118,900 for 98 houses, Willington West Farm; £56,717 for 50 houses, Low Willington.

**Walsall.**—T.C. to adapt No. 111, Birmingham-rd. as hostel for men, at £11,110.

**Warrington.**—B.C. approved plans for:—46 houses, Poplars-av. estate, site, 35, for B.C.; alterations to offices, 100, Bridge-st., for Co-op. Insurance Society; extensions to recreation club, Haydock-st., for Winwick-st. Tannery, Ltd.; alterations, Bewsey-st., for Lawrence Bright & Co., Ltd.; offices and storerooms, Clarence-st., for Daniel Cooper, Ltd.; extensions to wagon repair shop, Dallam-la., for J. Fullelove, Ltd.; sheet metal works, Wilderspool Causeway, for E. Bather; social club, Gas-st., for N.W. Gas Board; approved 2-storey annexe to "The Chestnuts," Lymm; to invite tenders for erection of booster station at Woolston; to sell land, Battersby-la., to Rylands Bros., Ltd., for proposed engineering workshop.

**West Hartlepool.**—T.C. has been allocated 230 houses for 1950. S. M. Richmond, Boro' A.

**Whitchurch.**—U.D.C. to prepare plans for next housing scheme. Plans by surveyor, F. W. Sanders.

**Whitley Bay.**—U.D.C. is planning old people's houses, etc., on land between Beresford-rd. and Collywell Bay-rd. Northumberland C.C. to build four police houses, Elmtree-gdns.

**Wigton.**—R.D.C. to build 115 houses in 1950.

## TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

**Aberystwyth.** — Extensions to secondary school at Ardwyn: *F. E. Davies & Son, Felindie Mill, Aberarth, £30,917.

**Axminster.**—Erection of 30 houses, Boxfield-rd., for U.D.C.: *Mitchell & Bailey (Axminster), Ltd., £41,618.

**Belper.**—Ten houses at Belper-la., site No. 3, for U.D.C. A. Percy Taylor, A.I.A.S., M.Inst.R.A., 59, Chapel-st., Belper, Derbys. Quantities by F. Bertram Mewis, F.I.A.S., Worcester: *James Milward & Sons, Belper, £13,374.

**Blyth.**—The work of erecting 56 houses on the Newsham-rd. housing scheme, for T.C., is to be shared among the following builders:—Towers & Son, Union-st.; T. H. Nicholson, High-st.; Blyth Co-op. Society (Building Dept.); R. Hush, Union-st.; J. E. Dover, Croft-rd.; and J. & W. Simpson, Cowpen-rd. (All of Blyth.)

**Boldon.**—Erection of 44 houses at Boldon Colliery, for U.D.C. N. Hindmarch, S.: *Gordon Durham & Co., Ltd., East Boldon, £59,290.

**Bradford.**—Day nursery at Thornton-rd., for T.C.: *Direct Labour, £10,900.

**Bromsgrove.**—26 houses at Shawhurst, for R.D.C.: *Harold Smith, Ltd., Edgbaston-rd., Birmingham, £37,200 (in lieu of previously accepted tender).

**Caernarvon.**—New voluntary-controlled school, for C.C.: *H. E. Williams, 42, Glenrafon, Bangor, £102,287.

**Cheltenham.**—42 flats at Rowanfield-rd. estate, for T.C.: *George Wimpey & Co., Ltd., £48,327 (subject to M.H. approval).

**Crewe.**—96 houses for the T.C.: *John Laing & Son, Ltd., £120,595.

**Darlington.**—Erection of 18 houses on the Haughton site north, for T.C. E. A. Tornbohm, Boro' Architect: *Dunn & Dunwell, six; *Leslie & Co., six; *Piggott Bros., two; and *Brown & Dixon, Ltd., four. All local builders.

**Elham.**—Five pairs of houses at The Street, Hawkinge, for R.D.C. Willan & Stewart (F. & A.), 127, Sandgate-rd., Folkestone, Kent:—

| | |
|---|---|
| S. Vant & Son, 248, Cheriton-rd., Folkestone | £16,500 |
| S. A. Rye, Ltd., Shaftesbury-av., Folkestone | 16,388 |
| James Dixon, Tram-rd., Folkestone | 15,255 |
| D. Castle, 3, Coombe-rd., Folkestone | 14,989 |
| Wm. Dunk, Ltd., 47, Tontine-st., Folkestone | 14,670 |
| O. Marx & Son, Ltd., 153, Sandgate-rd., Folkestone | 14,540 |
| Hayward & Paramor, Ltd., Coolinge Works, Folkestone | 14,340 |
| Ames Bros., High-st., Elham, Canterbury | 14,248 |
| W. W. Bennett, 1, New-st., Folkestone | 14,173 |
| May & Castle, 51, Coolinge-rd., Folkestone | 14,027 |
| Jenner & Son, Ltd., 53-9, Broadmead-rd., Folkestone | 13,939 |
| D. Baker & Co., Ltd., Plain-rd., Folkestone | 13,869 |
| George Stone, 127, Sandgate-rd., Folkestone | 13,614 |
| *C. V. Buchan & Co., Ltd., 9, King-st., Dover | 13,464 |

**Gosforth.**—Erection of 16 pairs of flats on the Regent Farm Estate, for U.D.C.: *M. J. Liddell & Son, Hunters-rd., Gosforth, £2,110 a pair.

**Hackney.**—104 dwellings, comprising Prout-rd. housing scheme, for B.C.: *Tersons, Ltd., 1, Seward-st., E.C.1, £166,600 (subject to L.C.C. approval).

**Hambledon.**—Houses and flats at The Village site, Cranleigh, for R.D.C. S. P. Youldon, F.R.I.C.S., M.I.Mun.E.: *The Grafton Estates Co., Worthing, £17,419 (12 houses); *Mr. B. G. Merrison, Churt, £8,162 (eight flats).

**Harlow.**—Erection of three blocks of flats, for Harlow Development Corporation. Architect, Frederick Gibberd (F.), 35, Gordon-sq., W.C.1: *Gilbert & Ash, Ltd., £86,300.

**Herefordshire.**—Erection of second phase of infants' school and erection of new junior school at Hunderton, for C.C. W. Usher (A.), County A., Bath-st., Hereford. Quantities by Vale & Kingsford, Wolverhampton: *W. H. Peake & Son, Barton Works, Hereford, £130,389.

**Huntingdonshire.**—Additional accommodation, Huntingdon Secondary Modern School, for C.C. S. J. Hands (A.), County A., Huntingdon. Quantities by Burt & Ballard, Leicester: *The Singfield Construction Co., Ltd., St. Ives, Hunts, £6,763.

**Lancashire.**—Police station and houses, Westburn, for C.C. Samuel MacColl, architect, County-chbrs., Beckford-st., Hamilton. Excavation, brick and allied works, R. Brown & Co. (Builders), Blantyre, £8,585; carpentry, joinery, ironmongery and glazing works, etc., Munro & Janor, Uddingston, £3,566; slating and roughcast works, etc., Archibald Rowatt & Sons, Ltd., Hamilton, £1,258; plumbing, sanitary engineering and gas fitting works, etc., Duncan Johnstone, Ltd., Strathavon, £2,100.

**Leics.**—Erection of Science Block at Loughborough College, for C.C. T. A. Collins (A.), County A., County Offices, Grey Friars, Leicester: *Wm. Moss & Sons, Ltd., Queen's-rd., Loughborough, £93,782 (first instalment).

**Liverpool.**—Works for City Council. 12 flats at Virgil-st. area: *Direct Labour, £17,500.

**L.C.C.**—Contracts exceeding £2,500 in value placed by L.C.C. during period ending December 31. The redecoration and repair of Kenwood House, Drury & Co., Ltd., S.E.5. Construction of Block 21 and other work at Sumner Estate Extension, Camberwell, and for the construction of blocks 14, 15 and 22 on the basis of the rates and prices contained in the prices bills of quantities for block 21, Tersons, Ltd., E.C.1. Laying-out of gardens at Heathside estate, Lewisham, Gilliam & Co., Ltd., Croydon. Repairs after war damage at Tollet Special School, Whyatt (Builders), Ltd. Adaptation of Barrington School Orphanage for use by Brixton School of Building, Henry Kent (Builders), Ltd. Repair of war damage, etc., at Ilderton-rd. School, Camberwell, Drury & Co., Ltd., S.E.5. Completion of work at Whitefoot-la. School, Lewisham, Walker (Tooting), Ltd. Erection of gymnasium and changing rooms, etc., at Brixton Day College, Clarke Barton & Co., Ltd. Foundation works at Old Palace School, Poplar, W. J. Simms, Sons & Cooke, Ltd.

**¶London (Admiralty).**—Following are particulars of contracts placed by the Civil Engineer-in-Chief's Department, Admiralty:—

*Leith*: R.N.V.R. Headquarters, Installation of hot-water heating system, James Coombe & Sons, Ltd., 103, North Hanover-st., Glasgow C.1. *Rosyth*: H.M.S. "Caledonia," Tiling and lining bathrooms, Toffolo Jackson & Co., Ltd., 15, Annandale-st., Edinburgh 7.

**¶London (M.O.W.).**—Contracts placed by M.O.W. for week ended December 17:—

*London*: Ministry of Fuel, Portman Court, Portman-sq., W.1, Internal decorations, Alfred Bagnall & Sons, Ltd., York House, 141, Uxbridge-rd., W.12; Cunningham Telephone Exchange, N.W.8, Internal painting, C. & T. Painters, Ltd., Mordaunt-rd., Harlesden, N.W.10; Clerkenwell Telephone Exchange, City-rd., Internal and external painting, C. & T. Painters, Ltd., Mordaunt-rd., Harlesden, N.W.10. *Dorsetshire*: Bridport, Telephone exchange, Exeter Building Contractors, Ltd., 14, Dixs-field, Exeter. *Durham*: Oxbridge-la. School, Stockton-on-Tees, Additional classrooms, Thornton Construction Co., 30, Bridge-rd., Stockton-on-Tees. *Essex*: Polish Hostel, Kelvedon, Exterior and interior painting, Hutton Builders, Ltd., Birch, Colchester. *Herefordshire*: P.O. Garage, Grunstand-rd., Hereford, New boiler-house, Bayley Bros. (Hereford), Ltd., Cotterell-st., Hereford.

**London (Upper Woburn-place).**—Plans for a hotel on a site on the west side of Upper Woburn-pl. at the junction with Tavistock-sq. have been prepared by Mr. C. Lovett Gill, F.R.I.B.A., 41, Russell-sq., W.C.1. A start is to be made with the first section. *Mullen & Lumsden, Ltd., 41, Eagle-st., Holborn, W.C.

**¶London (War Dept.).**—Works contracts placed by War Dept. for week ended December 24:—

*Kent*: Building work, Lewis, G., & Sons (Dover), Ltd., Dover. *Co. Antrim*: Building work, John Sinton, Ltd., Tandragee. *Co. Down*: Road work, Irish Roads (Belfast), Ltd., Belfast. *Glamorgan*: Building work, T. F. Howells, Ltd., Caerphilly. *Shropshire*: Building work, M. A. Boswell, Ltd., Wolverhampton. *Staffordshire*: Miscellaneous work, G. E. Shepherd (two contracts), Hednesford. *Hampshire*: Building work, Kemp, G., Stroud & Co., Ltd., Aldershot. *Yorkshire*: Miscellaneous work, J. Pullan & Sons, Ltd., Leeds.

**Looe.**—Four houses at Sun Rising estate, for U.D.C. G. H. Ivory & Partners, architects, 24, Athenæum-st., Plymouth:—

| | |
|---|---|
| H. Marshall, West Looe | £5,587 |
| E. Pearce, East Looe | 5,606 |
| †Taylor Bros. & W. Evill, East Looe | 5,528 |

**Newcastle.**—Two foundries and cooling shops for British Engines, Ltd., Glasshouse-st.: *R. Bowey & Son, Back Raby-st., Newcastle.

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**Newcastle-on-Tyne.**—Erection of the new Hilton Primary School, for E.C. George Kenyon, City A., 18, Cloth-market, Newcastle: *Cussins, Ltd., Moor Court, Gosforth, Northumberland, £117,000.

**Newhaven.**—16 dwellings at Meeching estate, scheme No. 4, for U.D.C. A. Underdown, F.R.I.B.A., F.I.A.A.:—

| | |
|---|---|
| *The Dorset Building Contractors, Brighton (2 blocks of 4 flats) ... ... | £9,985 |
| *The Dorset Building Contractors, Brighton (3 pairs of houses) ... ... | 8,995 |
| *S. Whyte, Newhaven (1 pair of houses)... | 2,724 |

**Oldham.**—Houses for B.C.: *Unit Construction Co., Ltd. (108); *Kenyon Construction Co., Ltd. (164).

**Peterborough.**—Infants' school at Brewster-av., Woolston, for E.C.: *J. W. Barber & Sons, 9, Church-st., Stanground, £32,857.

**Plymouth.**—Erection of secondary modern school, Efford estate, for T.C. E. G. Catchpole (A.), City A., Plymouth. Quantities by H. S. Haughton & Partners, Plymouth: *Staverton Builders, Ltd., Staverton, nr. Totnes, £124,952.

**Pwllheli.**—Kitchen and dining-room at Grammar School: *J. O. Jones & Son, Ltd., Morfa Nevin, £4,097.

**Rotherham.**—40 houses at Broom Valley estate, for C.B. E. J. Manson, A.M.Inst.C.E., B.E., Municipal Offices. Quantities by Henry Vale & Sons, Wolverhampton: *O. Weaver & Sons, Ltd., Harlington-rd., Mexborough.

**Rushden.**—24 houses at Upper Queen-st. estate, for U.D.C. A. Millar, E. & S., Council-bldgs.: *F. & R. Windsor, 28, Newton-rd., Rushden; *Mr. E. Sutcliffe, Roland-way, Higham Ferrers (12 houses each).

**Sheffield.**—Six houses at Bracebridge Heath, for Regional Hospital Board: *E. Norman North, Hykeham, Lincoln, £10,092.

**Southampton.**—Erection of 30 "Unity" houses: *J. J. Udall's Building Co., Ltd., West Quay-rd., Southampton, £42,487.

**Southampton.**—War damage repairs and other works at Woolston Secondary School for C.B. Fowler & Grove (A.A), 140, Lodge-rd., Southampton. Quantities by Shears & Pick, 4, College-pl., Southampton.

| | |
|---|---|
| J. Udalls Building Co., Ltd., Southampton ... ... ... ... | 15,597 |
| Mullen & Lumsden, Ltd., Southampton | 15,250 |
| A. E. Jukes & Son, Ltd., Southampton... | £15,812 |
| Mr. Louis S. Tuffin, Southampton ... | 14,226 |
| Lloyd & Jenkins, Southampton ... ... | 13,921 |
| John Lewis Building, Ltd., Southampton ... ... ... ... ... ... ... | 13,895 |
| *Crosby & Co., Ltd., Lion Works, Farnham, Surrey ... ... ... ... ... | 12,735 |

**Stockton-on-Tees.**—Erection of road bridge over the Darlington-Saltburn railway, for T.C.: *Tarslag, Ltd., Stockton-on-Tees, £83,843.

**Stoke Newington.**—Erection of 18 flats at 1-17 (odd), Defoe-rd.: *William J. Jerram, Ltd., £22,164.

**Stourbridge.**—72 houses at Norton estate for T.C. *Nathan Hyde, Sedgley, nr. Dudley, £90,924. (This contract is in substitution for the paragraph published in our issue of December 23 which was inaccurate.)

**Sunderland.**—Additions to Bede Towers Hostel, for E.C. H. C. Bishop, Boro' A.: *Snowdon Bros., Ltd., Belford-rd., Sunderland, £70,807 (less an unspecified amount for the omission of swimming bath).

**Upholland.**—Eight houses at Newgate, Ormskirk-rd., for U.D.C. L. C. Corleti, S., Council Offices: *L. Dickinson, Dingle-av., Upholland (subject to M.O.H. approval).

**Walthamstow.**—Works for B.C. Block of four two-bedroom houses at Ickworth Park-rd.: *J. Wilson & Sons, £3,917; three houses at Higham Hill-rd./Mayfield-rd., and four at Blackhorse-la.: *P. G. Evans & Sons, Ltd., £1,305 per house (both subject to M.H. approval).

**Warsop.**—36 houses at Leeming-la., for U.D.C.: *J. H. & W. E. Illett, Bartrops Maltkilno Dock-rd., Worksop, £46,007.

**West Bromwich.**—60 flats and maisonettes at Hateley Heath estate: *J. D. Eadie & Co., (Wolverhampton), Ltd.

**Widnes.**—74 dwellings at Hale-rd. estate for T.C. T. A. Brittain (A.), Boro' A., Brendan House, Widnes-rd. Quantities by Gornall Wainwright & Co. Group 1—18 houses, *Morley & Sons, Huyton Quarry, Lancs, £23,952. Group 2—30 houses, *J. J. Gallagher & Co., 11, Birchfield-rd., Widnes, £36,890. Group 3—26 houses, *Morley & Sons, Huyton Quarry, Lancs, £30,470.


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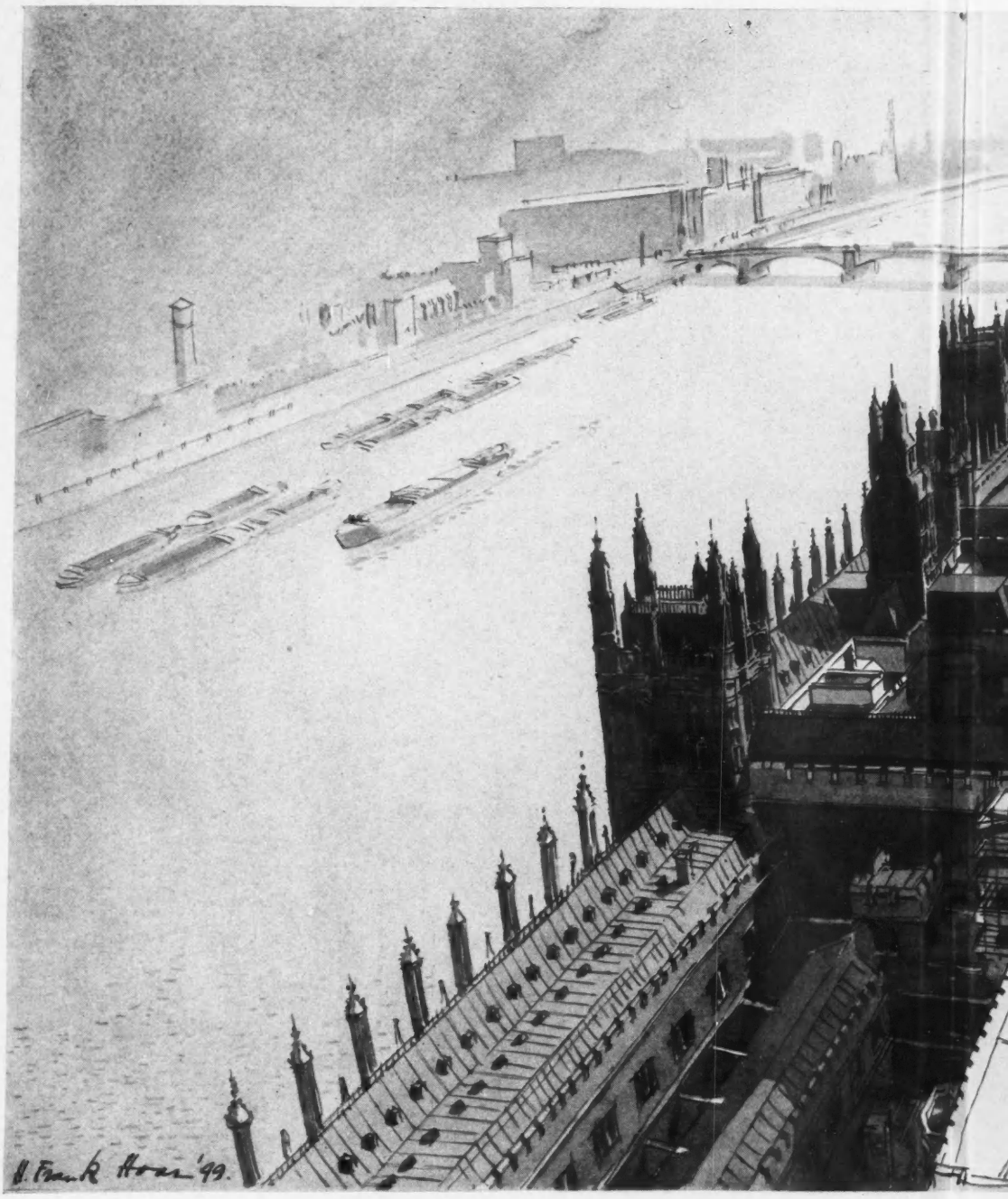


CHANGING LONDON. No. 4.—The Palace of Westminster, lo

*From a pen and wash drawing specially made for "The*

estminster, looking up river, as seen from the Clock Tower.

*nade for "The Builder" by H. FRANK HOAR.*